HIV/AIDS Professional Education for Kentucky

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This course meets the licensure requirements of KRS 214.610 / 615 / 620 for all health professionals. Kentucky CHFS-Approval # 0415-1566-M

Course Objectives

At the end of this course, each participant will be able to:

- **S**ummarize **medical** and **epidemiological** information about HIV and the diseases and conditions it can cause.
- **U**nderstand and describe methods of **transmission** and **prevention** of HIV and current recognized methods of medical treatment.
- **D**efine management of HIV in the healthcare workplace and other working environments, consistent with **OSHA Bloodborne Pathogens Standards**.
- **A**pply appropriate **attitudes & behaviors** toward those infected with HIV.
- **I**dentify comprehensive human **services** available to assist those with HIV infection.
- **U**nderstand HIV and AIDS **Reporting** Requirements and identify **legal issues** surrounding HIV infection

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An Epidemic is Born

The **H**uman **I**mmunodeficiency **V**irus (**HIV**) is a retrovirus that can lead to **A**cquired **I**mmune **D**eficiency **S**yndrome (**AIDS**), a condition in humans in which the immune system begins to fail, leading to life-threatening opportunistic infections.

The AIDS epidemic officially began on June 5, 1981, when the U.S. Centers for Disease Control and Prevention in the "Morbidity and Mortality Weekly Report" announced unusual clusters of Pneumocystis jiroveci (carinii) pneumonia (PCP) in five men in Los Angeles.

However, these were not the first cases of AIDS.


MMWR
MORBIDITY AND MORTALITY WEEKLY REPORT

Retrospective studies show that HIV was present In humans as early as 1959.

A 2007 study published in the Proceedings of the National Academy of Sciences claimed that, based on the results of genetic analysis, HIV probably moved from Africa to Haiti and then entered the United States around 1969.

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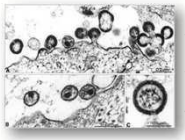
Viral Relationships with Cells



Viruses are considered non-living because they do not use energy to grow or to respond to their surroundings. Viruses are little more than genetic information (DNA, or RNA in the case of "retroviruses" like HIV) wrapped in a protective outer coating.

Viruses don't serve any purpose but to exist and make more viruses. However, they cannot actually reproduce on their own. Instead, their genetic information takes control over the cell the virus infects and retools the cell to make copies of the virus. They hitchhike their way into existence by using cells to replicate (duplicate) them. This process damages or even destroys the host cell.

Not just any cell can be infected with any virus. The protein structures on the surface of the virus need to be "specifically sticky" to the counterpart protein structures on the surface of the host cell.

NOTE: Volume UP for next slide …

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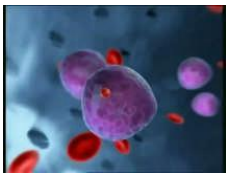
Viral Relationships with Cells



Animation generously provided by Pfizer, Inc.

For HIV, the surface glycoprotein "gp120" has this affinity for "CD4+" on the surface of certain *human* cells. $CD4^+$ (cluster of differentiation 4) is a glycoprotein expressed on the surface of T-helper cells, regulatory T-cells, monocytes, macrophages, and dendritic cells. These cells are the potential hosts to HIV.

As mentioned before, these targeted $CD4^+$ cells are *human* cells, so HIV is a *human* virus. Although similar to "SIV" found in a few primates, HIV cannot infect dogs, cats or other animals because they do not have the target cells needed by HIV.

Insects cannot carry HIV – even those that bite. Mosquitoes do not transfer HIV. If they did, most of us would have been infected by now.

Pets that belong to people with HIV are not at risk of becoming infected.

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Viral Relationships with Cells

Since target cells for HIV infection are not commonly found in most body fluids encountered casually and in public, HIV transmission is fairly limited.

Fortunately, HIV's host cells are not found in sweat, tears, urine, feces, sputum, non-bloody saliva, vomit or nasal secretions. So these fluids are barren environments for HIV. Likewise, these fluids do not transmit HIV.

And that's a good thing. Because you have probably encountered these fluids from another person several times today already (on a door knob, toilet handle, telephone, computer keyboard, etc.). Some viruses (such as those that cause the common cold and the flu) *can* be transmitted these ways. That's because they have different host cells than HIV, which *are* found in nasal secretions, sputum, etc.

Understanding the dependency of viruses to their host cells is the key to understanding HIV transmission and the nature of the AIDS pandemic.

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Viral Relationships with Cells

People with HIV have been living and walking amongst us for decades now. At least one person with HIV has sneezed or coughed near you. They have prepared your food. They have shaken your hand. They have cared for your children. They have used the same public toilets and phones and swimming pools as you have for the past 30 years. And you haven't been infected from these contacts because …

… HIV is not casually transmitted.

Yet, in 2006 a Kaiser Family Foundation Study found that 37% of the public believed that HIV was transmitted through kissing. The study also showed that 22% of the public believe that sharing a glass will transmit HIV, and 16% believe that HIV can be transmitted through touching a toilet seat.

If HIV were transmitted so easily, most of us would have been infected by now ... just as we have all been infected with the common cold, the flu or other casually transmitted viruses that do not involve fluids requiring intimate contact.

NOTE: Volume UP for next slide …

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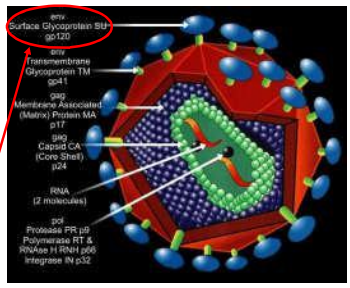
HIV Components

HIV appears at first to be a simple virus, consisting of just nine genes. Yet it makes up for that bare-bones structure in a sinister and complex way — by literally taking over the cellular machinery of its victims so it can multiply and destroy.

This diagram shows the components of HIV and some of the involved protein structures.

It is the envelope surface glycoprotein (gp120) that is "specifically sticky" to CD4⁺ on cell surfaces.



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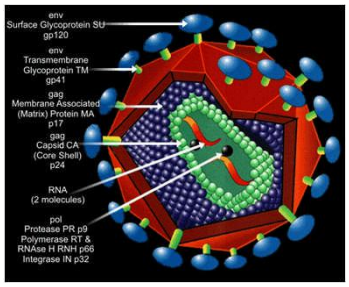
HIV Components

Without cells with CD4⁺ on their surface, HIV has no hope of existence.

Although these cells are not found in sweat, saliva, etc., they *are* found in blood and a few other fluids. And they are very important cells to the immune system. Once inside, HIV reeks havoc on its host cell.

Here's what happens once HIV is inside these cells …



10

HIV's "Life" Cycle

(remember, viruses are not actually alive)

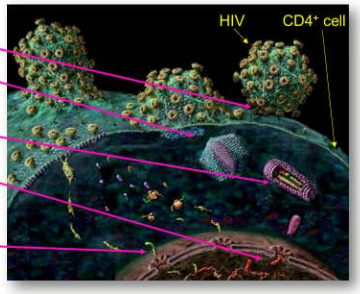
The virus attaches to cell surface (gp120 to CD4⁺).

Virus core enters cell.

Viral RNA is converted to DNA (through process called "reverse transcriptase").

Viral DNA enters cell nucleus and combines with host cell's DNA.

RNA copies are made, which leave the nucleus.



11

HIV's "Life" Cycle

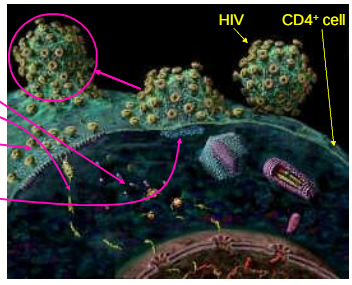
(remember, viruses are not actually alive)

New viral proteins.

New viral RNA.

New viral components congregate at cell surface.

New viral particles "bud" from cell, rupturing cell wall.



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HIV's "Life" Cycle

HIV budding, then attaching to another cell

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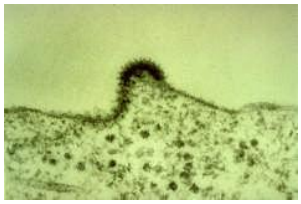
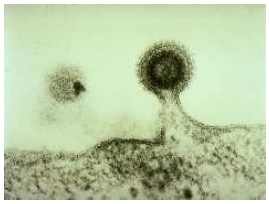
HIV's "Life" Cycle

Up close, you can see the cell with HIV budding from it, puncturing the cell membrane as the new viral particles are propelled out of the cell.





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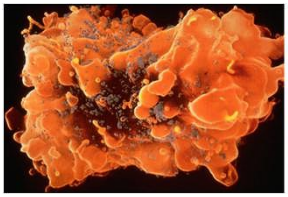
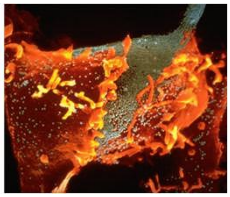
HIV's "Life" Cycle

Budding is one of several processes where HIV damages / destroys $CD4^+$ cells, which eventually can burst, spewing out new viral particles to start the cycle over.





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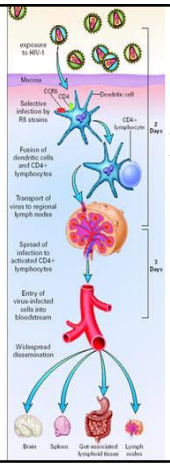
HIV's "Life" Cycle

Day 0 — Exposure to HIV

Day 0-2 — Virus collected by dendritic cells, carried to lymph node

Day 4-11 — HIV replicates in CD4 cells, released into blood

Day 11 + — Virus spreads to other organs



Kahn JO, Walker BD. N Engl J Med. 1998;339:33-39.

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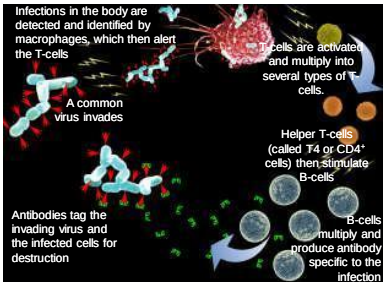
The Immune System Response

$CD4^+$ cells include several types of human blood cells. One key target of HIV is the $CD4^+$ lymphocyte, "helper T-cells" or simply "T4-cells" of the immune system.

These helper T-cells play a vital role in the body's immune system:



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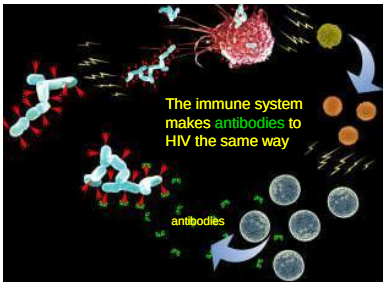
The Immune System Response

This normal immune response happens with HIV, too, and HIV antibodies are developed. However, the immune system cannot eliminate HIV.

The "seroconversion period" or "window period" refers to the period of time it usually takes to develop detectable antibodies following infection with HIV. In 75% of persons infected, antibodies are produced in 4 to 8 weeks; in almost all persons, antibodies are produced within 14 weeks.



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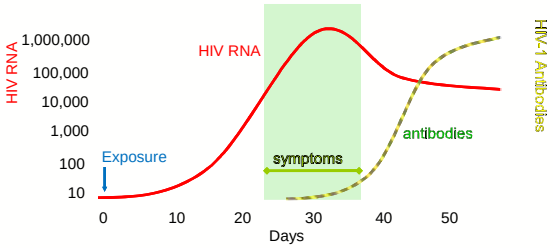
HIV Antibody Development



Antibody conversion typically 22-27 days following infection

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HIV Antibody Tests

"AIDS" is the end-stage of HIV disease, so technically there is no such thing as an "AIDS test." Testing for HIV usually involves the detection of antibodies (not the virus or disease process itself). There are several types of HIV tests on the market. In most cases the ELISA or EIA (enzyme-linked immunosorbent assay), used on blood drawn from a vein, is used to look for antibodies to HIV.
A reactive ELISA must be followed-up (confirmed) with a test such as the Western blot to make a positive diagnosis.

Blood tests for HIV antibodies are available (along with pre-test and post-test counseling, referral and partner notification) at every county health department throughout Kentucky.

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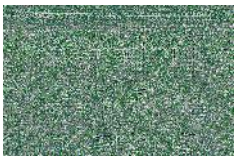
The ELISA



In the lab, the ELISA test uses a plate that contains many wells filled with a solution containing HIV antigen. The antigen sticks to the surface of each well. The solution containing the serum (part of the blood that contains antibodies) is added to each well. Specific antibodies in the serum bind to the antigen, and remain in the well after they are washed. A series of dilutions (1:400) of the serum has to be done, and each one tested. A beam of light is passed through each well and the optical density is measured. The wells that reach the given threshold for optical density through the series of dilutions are the ones who have HIV. ELISA tests are extremely sensitive (meaning that if HIV antibodies are present, it is very likely to test positive). But the ELISA tests are NOT as specific, so any reactive ELISA must be repeated, and followed up with a Western blot test … which is extremely specific.

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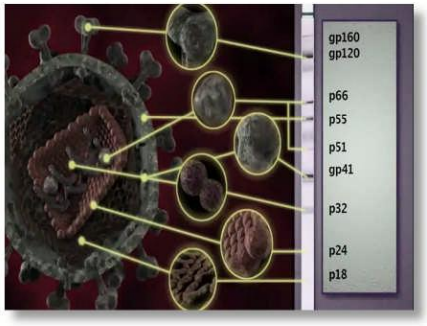
Confirming ELISA Results with Western Blot



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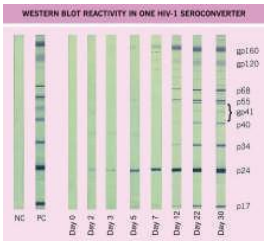
The Western Blot

In this example, progression of HIV antibody development can be seen from left to right. Each column is a separate Western blot result taken from a newly infected person over a 30-day period. The first two on the left are the negative (NC) and positive controls (PC).

Each black or dark grey horizontal stripe is representative of the presence of a different antibody against a protein found in HIV. To be conclusive (HIV-positive), a Western Blot must have 5 horizontal stripes.



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Rapid HIV Antibody Tests

ELISA technology is now commonly used in several rapid HIV antibody tests. Tests can be performed on-site, and results are available in 20 minutes or less.

The Kentucky Department for Public Health provides:

- OraQuick ADVANCE Rapid HIV 1/2 Antibody Tests (an oral mucosal swab)

- Clearview COMPLETE HIV 1/2 Antibody Tests (fingerstick blood)

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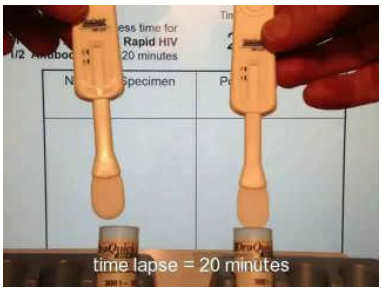
Rapid HIV Antibody Tests

OraQuick ADVANCE Rapid HIV 1/2 Antibody Test – IN ACTION



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Rapid HIV Antibody Tests

When a rapid test is positive, it must be confirmed with a Western blot.

Western blots can be performed from whole blood submitted to the state lab OR can be performed with an OraSure (oral mucosal swab) test.

OraSure samples are sent to a laboratory; results are available in about 3 days.

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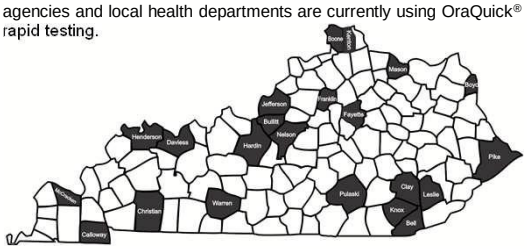
Where to Get Rapid HIV Antibody Tests

OraQuick® *ADVANCE*™ Rapid HIV-1/2 tests are a type of screening performed on oral mucosal transudate in which results are ready in 20 minutes. Preliminary positive results require confirmation. Several agencies and local health departments are currently using OraQuick® rapid testing.



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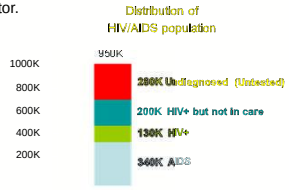
HIV Antibody Testing Recommendations

1/6 of the people with HIV in the U.S. have never tested. 1/4 in Kentucky!

The Centers for Disease Control and Prevention now recommends that HIV testing and HIV screening be part of routine clinical care *in all health care settings*. The CDC also has stated it suggests that the patient's right to refuse be preserved in order to facilitate a good working relationship between patient and doctor. The following summarizes the HIV testing recommendations from the CDC.

Who Should Be Screened?

- ✓ Patients in *all health care settings*.
- ✓ Persons at risk for HIV infections should be screened annually.
- ✓ ALL Pregnant women as part of prenatal screening.



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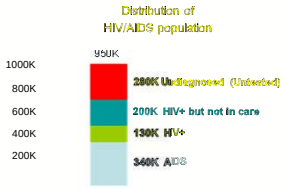
HIV Antibody Testing Recommendations

HIV screening is recommended for patients *in all health-care settings*, after the patient is notified that testing will be performed unless the patient declines (opt-out screening).

Separate written consent for HIV testing is not required as long as the general consent for medical care sufficiently provides informed consent for HIV testing.

Although critical at some early point in the continuum of care, prevention counseling should not be mandated at the time of HIV diagnostic testing or as part of HIV screening programs in health-care settings.



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HIV Antibody Testing Recommendations

CDC Recommendations for Testing ALL Pregnant Women

HIV screening should be included in the routine panel of prenatal screening tests for all pregnant women.

HIV screening is recommended after the patient is notified that testing will be performed unless the patient declines (opt-out screening).

Repeat screening in the third trimester is recommended in certain areas with elevated rates of HIV infection among pregnant women.

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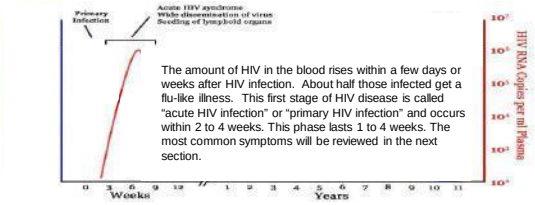
HIV Damages Immune System

Unfortunately, antibodies developed for HIV do not eliminate the infection. Instead, HIV is quickly replicated by the very cells that should play a role in destroying the virus.



The amount of HIV in the blood rises within a few days or weeks after HIV infection. About half those infected get a flu-like illness. This first stage of HIV disease is called "acute HIV infection" or "primary HIV infection" and occurs within 2 to 4 weeks. This phase lasts 1 to 4 weeks. The most common symptoms will be reviewed in the next section.

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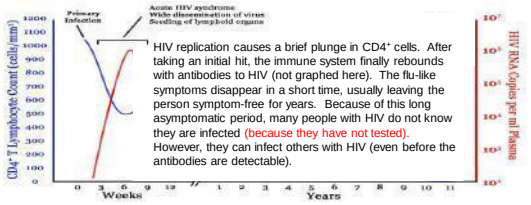
HIV Damages Immune System



HIV replication causes a brief plunge in $CD4^+$ cells. After taking an initial hit, the immune system finally rebounds with antibodies to HIV (not graphed here). The flu-like symptoms disappear in a short time, usually leaving the person symptom-free for years. Because of this long asymptomatic period, many people with HIV do not know they are infected (because they have not tested). However, they can infect others with HIV (even before the antibodies are detectable).

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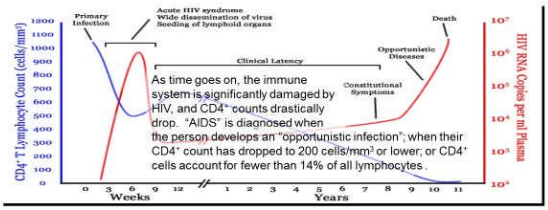
HIV Damages Immune System



As time goes on, the immune system is significantly damaged by HIV, and $CD4^+$ counts drastically drop. "AIDS" is diagnosed when the person develops an "opportunistic infection"; when their $CD4^+$ count has dropped to 200 cells/mm^3 or lower; or $CD4^+$ cells account for fewer than 14% of all lymphocytes.

(Normal $CD4^+$ counts range from 500 to 1500 cells per cubic millimeter of blood.)

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HIV Classification System

CDC

SAFER • HEALTHIER • PEOPLE

The Centers for Disease Control and Prevention uses both clinical findings and CD4 counts to categorize HIV infection.

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HIV/AIDS – Clinical Category A

AIDS is not one specific disease. AIDS is a syndrome (a group of symptoms that are characteristic of a disorder). Not all people with AIDS will experience the same course of illness. In 1993 the CDC formed three clinical categories of HIV infection:

Category A consists of one or more of the conditions listed below in an adolescent (13+ years) or adult with documented HIV infection. Conditions listed in Categories B and C (discussed next) must not have occurred.

- Asymptomatic HIV infection
- Persistent generalized lymphadenopathy
- Acute (primary) HIV infection with accompanying illness or history of acute HIV infection.

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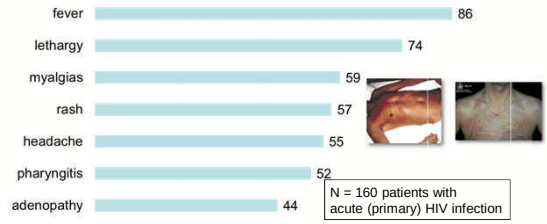
HIV/AIDS – Clinical Category A

- Acute (primary) HIV infection : common signs & symptoms



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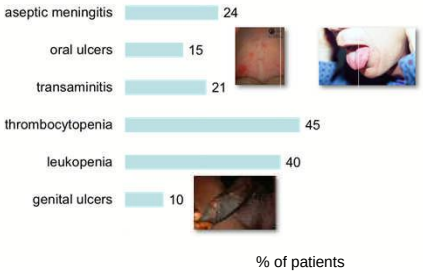
HIV/AIDS – Clinical Category A

• Acute (primary) HIV infection : common signs & symptoms



Kahn JO, Walker BD. N Engl J Med. 1998;339:33-39.

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HIV/AIDS – Clinical Category A

• Acute (primary) HIV infection : possible neurological symptoms

Meningoencephalitis or aseptic meningitis (uncommon)
Peripheral neuropathy or radiculopathy
Facial palsy
Guillain-Barré syndrome
Brachial neuritis
Cognitive impairment or psychosis

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HIV/AIDS – Clinical Category B

Category B consists of symptomatic conditions in an HIV-infected adolescent or adult that are not included among conditions listed in clinical Category C and that meet at least one of the following criteria:

a) the conditions are attributed to HIV infection or are indicative of a defect in cell-mediated immunity; or
b) the conditions are considered by physicians to have a clinical course or to require management that is complicated by HIV infection.

For classification purposes, Category B conditions take precedence over those in Category A. For example, someone previously treated for oral or persistent vaginal candidiasis (and who has not developed a Category C disease) but who is now asymptomatic should be classified in clinical Category B.

Examples of conditions in clinical Category B include, but are not limited to …

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HIV/AIDS – Clinical Category B

Examples of conditions in clinical Category B include, but are not limited to …

Bacillary angiomatosis

Candidiasis, oropharyngeal (thrush)

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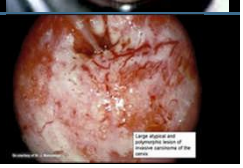
HIV/AIDS – Clinical Category B

Examples of conditions in clinical Category B include, but are not limited to …

Candidiasis, vulvovaginal; persistent, frequent, or poorly responsive to therapy

Cervical dysplasia (moderate or severe)/cervical carcinoma in situ



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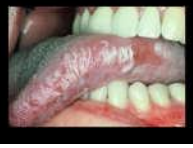
HIV/AIDS – Clinical Category B

Examples of conditions in clinical Category B include, but are not limited to …

Constitutional symptoms, such as fever (38.5° C = 101.3° F) or diarrhea lasting greater than one month

Oral Hairy Leukoplakia



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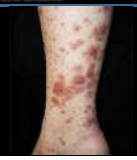
HIV/AIDS – Clinical Category B

Examples of conditions in clinical Category B include, but are not limited to …

Herpes zoster (shingles), involving at least two distinct episodes or more than one dermatome

Idiopathic thrombocytopenic purpura



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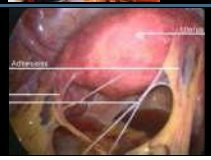
HIV/AIDS – Clinical Category B

Examples of conditions in clinical Category B include, but are not limited to …

Listeriosis

Pelvic inflammatory disease, particularly if complicated by tubo-ovarian abscess

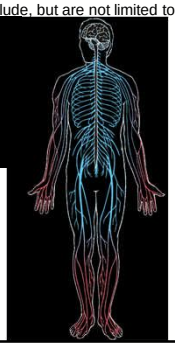


44

HIV/AIDS – Clinical Category B

Examples of conditions in clinical Category B include, but are not limited to …

Peripheral neuropathy



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HIV/AIDS – Clinical Category C

Category C includes the clinical conditions listed in the *original* AIDS surveillance case definition from the 1980's. For classification purposes, once a Category C condition has occurred, the person will remain in Category C.

In other words, once a person is diagnosed with AIDS, they are always said to have AIDS (even if they return to health with an undetectable viral load).

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HIV/AIDS – Clinical Category C AIDS – Surveillance Definition

An opportunistic infection is an infection caused by pathogens that usually do not cause disease in a healthy immune system. A compromised immune system, however, presents an "opportunity" for the pathogen to infect.

In 1993, the CDC expanded their *surveillance definition of AIDS* to include all HIV positive people with a $CD4^+$ T cell count below 200 per µL of blood or 14% of all lymphocytes.

A diagnosis of AIDS is made:

whenever a person is HIV-positive AND:

- has a $CD4^+$ cell count below 200 cells per microliter blood OR
- $CD4^+$ cells account for fewer than 14 percent of all lymphocytes

OR has been diagnosed with one or more of the AIDS-defining illnesses otherwise known as "Opportunistic Infections."

The AIDS case definitions for adults and children are similar, with several exceptions; lymphoid interstitial pneumonia/pulmonary lymphoid hyperplasia and multiple or recurrent serious bacterial infections are AIDS-defining only for children. Several other conditions, including certain types of cytomegalovirus and herpes simplex virus infections and toxoplasmosis of the brain, are AIDS-defining only for adults and for children older than one month of age.

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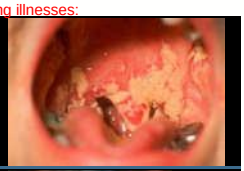
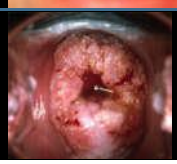
HIV/AIDS – Clinical Category C

AIDS-defining illnesses:

Candidiasis – esophageal, bronchial, tracheal, or pulmonary



Cervical Cancer, invasive



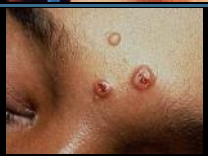
48

HIV/AIDS – Clinical Category C

AIDS-defining illnesses:

Coccidioidomycosis, disseminated or extrapulmonary

Cryptococcosis, extrapulmonary



49

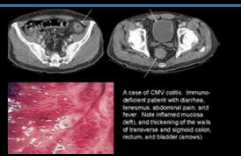
HIV/AIDS – Clinical Category C

AIDS-defining illnesses:

Cryptosporidiosis, chronic intestinal (greater than 1 month's duration)

Intestinal (duodenal) biopsies: Cryptosporidia are seen adhering to the epithelial cells (arrows)

Cytomegalovirus disease (other than liver, spleen, or nodes)



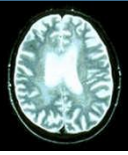
50

HIV/AIDS – Clinical Category C

AIDS-defining illnesses:

Cytomegalovirus retinitis (with loss of vision)

HIV Encephalopathy (HIV crosses the blood/brain barrier)



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HIV/AIDS – Clinical Category C

AIDS-defining illnesses:

Herpes Simplex (chronic ulcers greater than 1 month duration, or bronchitis, pneumonitis, or esophagitis)

Histoplasmosis, disseminated or extrapulmonary

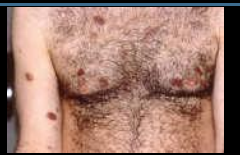
52

HIV/AIDS – Clinical Category C

AIDS-defining illnesses:

Isosporiasis, chronic intestinal (greater than 1 month's duration)

Kaposi's Sarcoma

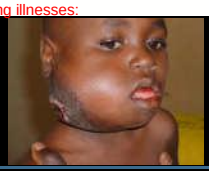


53

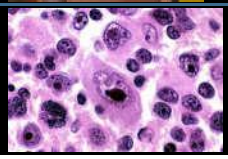
HIV/AIDS – Clinical Category C

AIDS-defining illnesses:

Lymphoma, Burkitt's



Lymphoma, immunoblastic



54

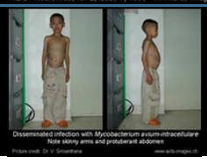
HIV/AIDS – Clinical Category C

AIDS-defining illnesses:

Lymphoma, primary, of brain

Source: Sakaie KE, Gonzales RG. Imaging of Neuro-AIDS. NeuroAids, vol. 2, issue 7, 1999. www.aids-images.ch

Mycobacterium avium complex or M. kansasii, disseminated or extrapulmonary



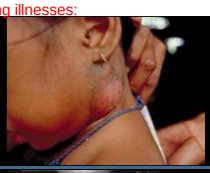
Disseminated infection with Mycobacterium avium-intracellulare
Note skinny arms and protuberant abdomen

55

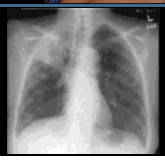
HIV/AIDS – Clinical Category C

AIDS-defining illnesses:

Mycobacterium tuberculosis (extrapulmonary)



Mycobacterium tuberculosis (pulmonary)



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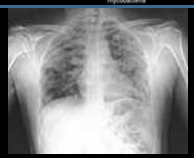
HIV/AIDS – Clinical Category C

AIDS-defining illnesses:

Mycobacterium, other species, disseminated or extrapulmonary

Acid-fast stain of duodenal mucosa (autopsy). All red areas represent mycobacteria

Pneumocystis jiroveci (carinii) pneumonia (PCP)

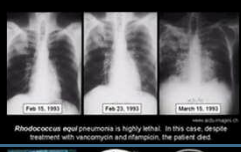


57

HIV/AIDS – Clinical Category C

AIDS-defining illnesses:

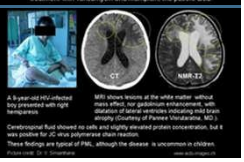
Pneumonia, recurrent



Feb 15, 1993 | Feb 23, 1993 | March 15, 1993

Rhodococcus equi pneumonia is highly lethal. In this case, despite treatment with vancomycin and rifampicin, the patient died.

Progressive multifocal leukoencephalopathy



CT | NMR-T2

A 6-year-old HIV-infected boy presented with right hemiparesis.

MRI shows lesions at the white matter without mass effect, nor gadolinium enhancement, with dilatation of lateral ventricles indicating mild brain atrophy (Courtesy of Parmex Vilordachie, MD.).

Cerebrospinal fluid showed no cells and slightly elevated protein concentration, but it was positive for JC virus polymerase chain reaction.

These findings are typical of PML, although the disease is uncommon in children.

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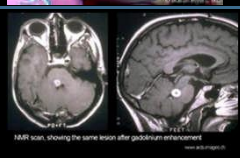
HIV/AIDS – Clinical Category C

AIDS-defining illnesses:

Salmonella septicemia, recurrent

Toxoplasmosis of brain



NMR scan, showing the same lesion after gadolinium enhancement

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HIV/AIDS – Clinical Category C

AIDS-defining illnesses:

Wasting syndrome due to HIV

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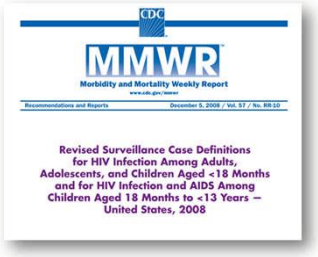
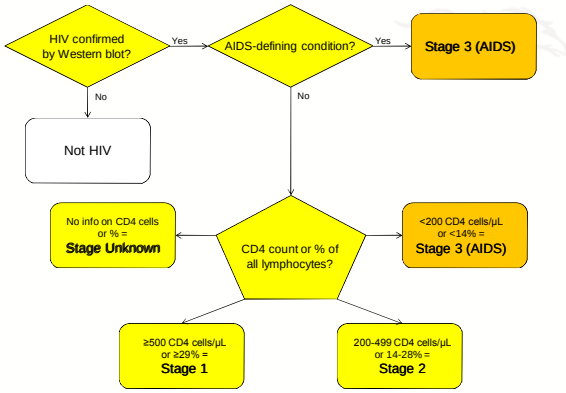
HIV Classification System Revision

In 2008 the CDC published the "Revised Surveillance Case Definitions for HIV Infection" which categorizes HIV into "stages" in addition to the previously defined "clinical categories."



61



For surveillance purposes, disease progression is from less to more severe; once cases are classified in a more severe surveillance stage, they cannot be reclassified into a less severe surveillance stage.

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HIV Classification System Revision

Using both the "Clinical Categories" and "CD4 Cell Count Stages" provides the following matrix, with "AIDS" classifications highlighted:

		Clinical Categories		
		Category A Asymptomatic, Acute HIV, or PGL	Category B Symptomatic Conditions, not A or C	Category C AIDS-Indicator Conditions
Stages of CD4	Stage 1 ≥500 cells/µL	A1 (HIV)	B1 (HIV)	C1 (AIDS)
	Stage 2 200-499 cells/µL	A2 (HIV)	B2 (HIV)	C2 (AIDS)
	Stage 3 <200 cells/µL	A3 (AIDS)	B3 (AIDS)	C3 (AIDS)

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Oral Manifestations

- May be first sign of HIV infection
  - May lead to testing and diagnosis
  - Oral conditions develop as immunosuppression progresses
    - Indicators of change in immune status
    - Require definitive management
- Oral manifestations of HIV infection
  - Certain conditions associated with risk of AIDS
  - May be first AIDS defining condition
- Overall average prevalence: 30 - 50%
  - In late stage AIDS – upwards of 90%

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Oral Manifestations – Diagnostics & Treatment

- Clinical appearance and symptoms
  - Non-specific
  - Atypical
- Incidence may indicate disease progression
- Require careful diagnostic techniques
  - Laboratory test for: Viruses – Fungi – Bacteria
  - Biopsy of lesions
- Require aggressive treatments
  - Slow to respond
  - Relapse / Recurrence is common
  - Concern about resistance

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Oral Lesions Associated with HIV

- Fungal
  - Candidiasis
  - Blastomycosis
  - Histoplasmosis
  - Phycomycosis
- Viral
  - Epstein Barr – Oral Hairy Leukoplakia
  - Herpes Simplex
  - Cytomegalovirus
  - Human Papilloma
  - Herpes Zoster
- Immune Hypersensitivity
  - Aphthous Stomatitis
  - Benign Lymphoepithelial
- Bacterial
  - Acute Necrotizing Ulcerative Gingivitis - rapidly progressive periodontitis
  - Tuberculosis
  - Gram- & Gram+ ulcers
- Neoplastic
  - Kaposi Sarcoma
  - Non-Hodgkin's
  - Squamous cell carcinoma antigen
- Medication side effects
  - Melanosis
  - xerostomia
  - ulcers and others

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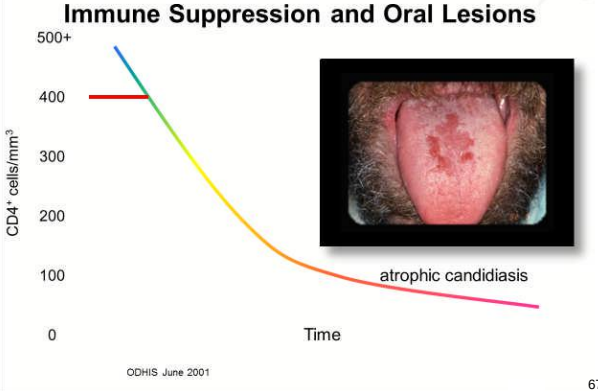
Immune Suppression and Oral Lesions



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Vaccine Development

Vaccine research for HIV began in 1987. At least thirteen different gp120 and gp160 envelope candidates have been evaluated.

$845 million was spent on AIDS vaccine research in 2011 *alone*. To date, very little success has been realized.

There are two approaches to HIV vaccination being researched:
1. Protect individuals who do not have HIV from contracting HIV
2. Therapeutic effect for persons who already have or may later contract HIV

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Vaccine Development

AIDSVAX, 1998 – 2004 (FAIL)
RV144, 2003 – ongoing (31% effective)
V520, 2004 – 2007 (FAIL)
HVTN 502, 2005 – 2007 (FAIL)
HVTN 505, 2009 – 2013 (FAIL)
MVA-B, 2011 – ongoing
SAV001, 2012 – ongoing

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Microbicidal Lubricants

July 2010 – South Africa

- A gel containing 1% Tenofovir (an anti-HIV drug) was found to be 39% effective in reducing male-to-female transmission of HIV.
- Found to be safe, even for rectal use.
- Also found to reduce transmission of herpes simplex virus type 2 (HSV-2).
- Not approved yet by FDA for public use.
- >24 other microbicidals are currently being studied.

Advantages:
- No need to negotiate your safety with partners
- Not dependent on use at the time of sex

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Treatment

"If you factor in all of the costs, treating HIV infection costs less than treating people for all of these other diseases and then letting them die."

"We're killing probably half a million young adults every year in the prime of their life just at the point where they should be contributing to society and the cost of that to society is enormous. The only thing that's more expensive than doing this is <u>not</u> doing this."

-Brian Williams, Professor of Epidemiology at the South African Centre for Epidemiological Modelling and Analysis in Stellenbosch

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Treatment

HIV infection is permanent. Hopes for a vaccine are still years down the road. And after a generation of research, there is still no known cure for HIV disease.

Eventually, one or more Opportunistic Infections (OIs) can kill a person with AIDS. Prophylactic drugs are available and can help to prevent some of the OIs. But while many OIs are treatable, some have no effective therapy at all.

Treatment options for people with HIV disease have gotten much better over the years. In addition to the many drugs used to treat OIs, many of the pharmaceutical advances in AIDS have to do with the advent of antiretroviral drugs that target HIV in several ways …

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Highly Active AntiRetroviral Therapy (HAART)

The term HAART (Highly Active Antiretroviral Therapy) is used when referring to the combining of several antiretroviral drugs (often called a "drug cocktail").

Currently there are several classes of HAART drugs, each attempting to interfere with different viral processes:

- Nucleoside/Nucleotide Reverse Transcriptase Inhibitors (NRTIs)
- Non-Nucleoside Reverse Transcriptase Inhibitors (nNRTIs)
- Protease Inhibitors (PIs)
- Fusion Inhibitors
- CCR5 Coreceptor Antagonists (Entry Inhibitors)
- Integrase Inhibitors

NOTE: Volume UP for next slide …

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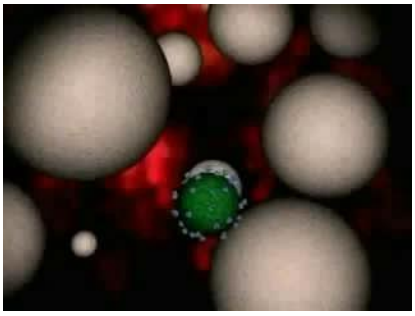
Viral Processes and HAART



Animation generously provided by Roche

74

HIV and HAART

- HAART does not cure HIV.
- Side effects of HAART and other secondary symptoms are usually the main reason HIV/AIDS patients have difficulty with dosage compliance.

75

Goals of HAART & Tools to Achieve Goals

- Improved quality of life
- Reduction of HIV-related morbidity and mortality
- Restoration and/or preservation of immunologic function
- Maximal and durable suppression of viral load
- Selection of antiretroviral regimen
- Preservation of future treatment options
- Rational sequencing of therapy
- Maximizing adherence
- Use of resistance testing in selected clinical settings

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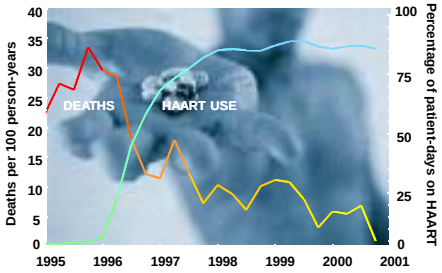
AIDS Mortality Rates vs. HAART Use: 1996 – 2001



Palella F *et al.* 8th CROI 2001; abstract 268b.

77

Indications for Initiation of HAART in Treatment-Naïve Patients

CD4⁺ T Cell Count	Recommendation for Antiretroviral Therapy
<350 cells/μL	Strongly Recommend Initiating Therapy
350 - 500 cells/μL	Recommend Initiating Therapy
>500 cells/μL	Consider Initiating Therapy
Initiating Antiretroviral Therapy Regardless of CD4⁺ Count	
• History of AIDS-Defining Illness • Pregnancy • HIV Associated Neuropathy • Hepatitis B Virus (HBV) Co-infection when Treatment of HBV is Indicated	

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HIV Resistance to HAART

HIV becomes "resistant" to a drug if it keeps multiplying rapidly while taking the drug. Changes (mutations) in the virus cause resistance. HIV mutates almost every time a new copy is made. Not every mutation causes resistance.
The "wild type" virus is the most common form of HIV. Anything different from the wild type is considered a mutation.

An antiretroviral drug will not control a virus that is resistant to it. It can "escape" from the drug. If the drug is continued, the resistant virus will multiply the fastest. This is called "selective pressure."

If medications are stopped, there is no selective pressure. The wild type virus will multiply the fastest. Although tests may not detect any drug resistance, it might come back if the same drugs are reintroduced.

Resistance testing helps health care providers make better treatment decisions for their patients.

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How HIV Resistance Develops

HIV usually becomes resistant when it is not totally controlled by HAART. However, more people are getting infected with HIV that is already resistant to one or more HAART drugs before they have taken these drugs themselves.

The more that HIV multiplies, the more mutations show up. These mutations happen by accident. The virus does not "figure out" which mutations will resist medications.

Just one mutation can make HIV resistant to some drugs. This is true for 3TC (Epivir) and the non-nucleoside reverse transcriptase inhibitors (nNRTIs). However, HIV has to go through a series of mutations to develop resistance to other drugs, including most protease inhibitors.

The best way to prevent resistance is to control HIV by taking strong antiretrovirals. If doses of medication are missed, HIV multiplies more easily. More mutations will occur. Some of them could cause resistance.

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Types of HIV Resistance

There are three types of resistance:

Clinical resistance: HIV multiplies rapidly in the body, regardless of HAART.
Phenotypic resistance: HIV multiplies in a test tube when HAART is added.
Genotypic resistance: The genetic code of HIV has mutations that are linked to drug resistance.

Clinical resistance shows up as a higher viral load, lower $CD4^+$ count, or opportunistic infections. Laboratory tests can measure phenotypic and genotypic resistance. However, the tests are not good at detecting "minority" mutations (less than 20% of the virus population). Also, they work better when the viral load is higher. If the viral load is very low, the tests might not work. Tests usually cannot be run if the patient's viral load is less than 500 to 1,000 copies per ml.

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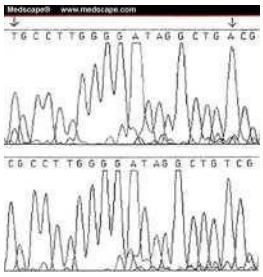
Phenotypic Testing for Resistance



A sample of HIV is grown in the laboratory. A dose of one antiretroviral is added. The growth rate of the HIV is compared to the rate of wild type virus. If the sample grows more than normal, it is resistant to the medication.

Phenotypic resistance is reported as "fold" resistance. If the test sample grows twenty times as much as normal, it has "20-fold resistance."

Phenotypic tests cost about $800. It used to take over a month to get the results. New phenotypic tests are somewhat quicker.

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Genotypic Testing for Resistance

The genetic code of the sample virus is compared to the wild type. The code is a long chain of molecules called nucleotides. Each group of three nucleotides, called a "codon," defines a particular amino acid used to build a new virus.

Genotypic testing costs about $250. Results come back in about two weeks.

"Virtual Phenotypic Testing"

This test is really a method of interpreting genotypic test results. First, genotypic testing is done on the sample. Phenotypic test results for other virus samples with a similar genotypic pattern are taken from a database. These matched samples tell you how the virus is likely to behave. The virtual phenotype is faster and less expensive than a phenotypic test.

Recent research suggests that a genotypic resistance testing should be done for every patient before they start taking HAART. This saves health and money by not putting someone on drugs that will fail them.

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Cross-Resistance to HAART

Sometimes a mutant version of HIV is resistant to more than one drug. When this happens, the drugs are called "cross-resistant." For example, most HIV that is resistant to nevirapine (Viramune) is also resistant to efavirenz (Sustiva).
This means that nevirapine and efavirenz are cross-resistant.

Cross-resistance is important when you change medications. Choose new drugs that are not cross-resistant to drugs already taken.

Cross-resistance is not totally understood. However, many drugs are at least partly cross-resistant. As HIV develops more mutations, it gets harder to control.

Every HAART dose must be taken according to instructions. This reduces the risk of resistance and cross-resistance. It also saves the most options for changing medications in the future.

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Benefits and Risks of Deferring HAART

BENEFITS

- Avoid negative effects on quality of life (side effects, dose scheduling)
- Avoid drug-related toxicity
- Preserve future drug options
- Delay development of drug resistance
- Decrease total time on medications

RISKS

- Possibility of irreversible immune system depletion
- Increased possibility of progression to AIDS
- Possible increased risk of HIV transmission

85

What is HAART

Consider these points when choosing an initial HAART regimen:

- Three main categories of regimens used:
  - **1 nNRTI + 2 NRTIs**
  - **1 PI + 2 NRTIs**
  - **3 NRTIs**
- A combination of nNRTI or PI plus 2 NRTIs preferred for most patients.
- There are few clinical endpoints to guide choices.
- Each type of regimen has its own advantages and disadvantages.
- Individualize the regimen choice.

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What is *NOT* HAART

- NEVER treat HIV with only one drug (monotherapy) – except possibly zidovudine (AZT) used to prevent perinatal HIV transmission. Otherwise, monotherapy is MALPRACTICE. Monotherapy causes viral resistance to antiviral drugs. Often entire classes of antiviral drugs become useless when one drug in the class fails.
- Dual NRTI therapy (should add a PI or nNRTI)
- 3-NRTI regimens (except abacavir/lamivudine/zidovudine and possibly lamivudine/zidovudine/tenofovir)
- NRTI-sparing regimens

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What HAART is *NOT*

- HAART is not a cure for HIV or AIDS. Although HAART drugs can reduce the viral burden, eradication of HIV is difficult.
- HAART is not the best solution to the epidemic. Drug resistant strains of HIV can develop after treatment is began, especially if the patient is non-adherent to the drug regimen. These resistant strains of HIV are now being transmitted to new cases, increasing the complexity of dealing with the epidemic and treating the newly infected.
- HAART does not *necessarily* make unprotected sex safe. Even those with HIV who have successfully reduced their viral burden down to undetectable levels still have *some* chance of transmission.
- **Although HAART can *reduce* the risk of transmission, it is not an excuse to forget about safer sex, IDU harm reduction, or universal precautions.**

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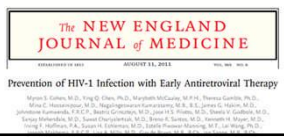
HAART as Prevention

In 2011 HIV Prevention Trials Network (HPTN) 052 Study showed:

- ✓ Early HIV treatment for those infected reduces risk of transmitting HIV to uninfected sexual partners by 96%


The NEW ENGLAND JOURNAL of MEDICINE

Prevention of HIV-1 Infection with Early Antiretroviral Therapy

89

Treatment as Pre-Exposure Prophylaxis (PrEP)

In 2013 Truvada® (emtricitabine & tenofovir disoproxil fumarate) was recognized to reduce the risk of becoming infected with HIV.


CDC Centers for Disease Control and Prevention
CDC 24/7: Saving Lives. Protecting People.™

Press Release

For immediate release: Wednesday, June 12, 2013
Contact: National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention

Daily HIV medications now proven to prevent HIV among all groups at high risk

A daily dose of a medication used to treat HIV infection reduced the risk of HIV acquisition among people who inject drugs by 49 percent. Those who took the medication most consistently had even higher levels of protection, according to a new study announced today by the Centers for Disease Control and Prevention – in collaboration with the Bangkok Metropolitan Administration (BMA) and the Thailand Ministry of Public Health (MOPH).

This is the first evidence that pre-exposure prophylaxis (PrEP) offers significant protection to individuals exposed to HIV through injection drug use. The findings were published online today in the *Lancet*.

"This is a significant step forward for HIV prevention. We now know that PrEP can work for all populations at increased risk for HIV," said Jonathan Mermin, M.D., director of CDC's Division of HIV/AIDS Prevention. "Injection drug use accounts for a substantial portion of the HIV epidemic around the world, and we are hopeful that PrEP can play a role in reducing the continued toll of HIV

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Treatment as Pre-Exposure Prophylaxis (PrEP)

PrEP use is:

- Not for use in persons with unknown or positive HIV status
- Not for persons with an estimated creatinine clearance <60 mL/min
- Only for adults at very high risk for HIV acquisition
- Must be delivered as part of comprehensive prevention services
- Should be accompanied by quarterly monitoring of HIV status, pregnancy status, side effects, medication adherence, and risk behaviors

- Adherence to daily PrEP is critical to reduce the risk for HIV acquisition, and achieving high adherence was difficult for many participants in PrEP clinical trials

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The cost of HAART is usually over $1,000 *per month per drug.*

Condoms & Syringes ≈ 25¢ each.

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Prevention – More Effective and Cheaper than HAART!

With new infections now including drug-resistant strains of HIV, and with little chance of an effective vaccine, *prevention remains the only real hope to stop HIV*.

HIV infection is 100% preventable. Remember, because of the presence of target cells in these fluids, HIV can be found in:

- **Blood**
- **Semen**
- **Vaginal secretions**

Prevention recommendations simply outline ways to avoid sharing such fluids.

The safest way to prevent HIV infection is to abstain from sex and injectable drug use. Abstinence excludes *all* physical sexual contact, not just intercourse.

However, as HIV and STD rates indicate later in this course, not all people choose to abstain from sex, especially in the US where abstinence-only programs have been mandated for years. It is critical that healthcare providers and educators understand and teach safer sex and harm reduction recommendations.

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Understanding Transmission = Understanding Prevention

Transmission of HIV occurs when an infected person's blood, semen or vaginal secretions enters an uninfected person's body, allowing HIV access to target cells. There are only a few ways this is likely to happen with infectious body fluids:

- **Blood** – injection drug use, sexual transmission, healthcare, perinatal
- **Semen** – sexual transmission
- **Vaginal secretions** – sexual transmission

Blood is more infectious than semen.
Semen (including pre-ejaculate) is more infectious than vaginal secretions.

The more fluid encountered, the higher the risk of infection.
The likelihood of infection also increases with the number of times exposed.

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Estimated per-act risk for acquisition of HIV by exposure route without intervention

Exposure Route	Estimated infections per 10,000 exposures to an infected source
Blood Transfusion	9,000
Childbirth	2,500
Needle-sharing injection drug use	67
Receptive anal intercourse without condom	50
Percutaneous needle stick	30
Receptive penile-vaginal intercourse without condom	10
Insertive anal intercourse without condom	6.5
Insertive penile-vaginal intercourse without condom	5
Receptive penile-oral sex	1
Insertive penile-oral sex	0.5

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Sexual Risk Scale

SAFEST: Abstinence, Fantasy (phone/cyber sex)
Mutual long-term monogamy between two uninfected non-IDU
Hugging, massaging
Kissing
Body-to-body rubbing without penetration
Mutual masturbation without sharing fluids

SAFER: Oral sex with a barrier (condom or dental dam)
Vaginal intercourse with a correctly used condom
Anal intercourse with a correctly used condom

UNSAFE: Oral sex without a barrier (especially risky for other STD)

VERY UNSAFE: Vaginal intercourse without a condom
Anal intercourse without a condom

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Male Condoms

Although many people mistakenly assume that all men know how to correctly use condoms, incorrect use is common and is a major cause of condom failure.

Remember:

- Grease, oils, lotions, or petroleum jelly (Vaseline) weaken latex. DO NOT USE THEM. Use only water-based jelly, cream or liquid that does not have oil in it.
- Use a new condom each time you have sex.
- Use only latex or polyurethane condoms.
- Store condoms in a dark, dry place at room temperature.
- Do not use a condom that may be old or damaged (unusually sticky, brittle or dried out, color is uneven or has changed), or if the condom wrapper is damaged.

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Male Condoms

1. Open the package carefully. Never bite it or use scissors.
2. Put on a condom when the penis is erect, before *any* penetration.
3. If the condom doesn't have a "reservoir end," squeeze tip of condom to remove air, leaving some slack to hold the pre-ejaculate and semen.
4. Hold the condom by the tip and unroll it so it covers the entire erect penis.

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Male Condoms

5. If the penis is uncircumcised, pull the foreskin back before putting on the condom.
6. After ejaculation, hold the condom close to the base of the penis and carefully withdraw.
7. Immediately throw away used condoms.
8. If you feel a condom break while having intercourse, stop and withdraw immediately.

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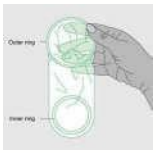
Female Condoms



BEFORE INTERCOURSE:

Open the female condom package carefully; tear at the notch on the top right of the package. Do not use scissors or a knife to open.

The outer ring of the female condom covers the area around the opening of the vagina. The separate inner ring found inside the condom is used for insertion and to help hold the sheath in place during intercourse.

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Female Condoms

While holding the sheath at the closed end, grasp the flexible inner ring and squeeze it with the thumb and second or middle finger so it becomes long and narrow.

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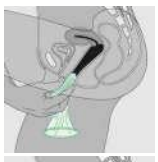
Female Condoms



Choose a position that is comfortable for insertion; squat, raise one leg, sit or lie down.

Gently insert the inner ring of the Female Condom into the vagina. Feel the inner ring go up and move into place.

Place, the index finger on the inside of the condom, and push the inner ring up as far as it will go.
Be sure the sheath is not twisted. The outer ring should remain on the outside of the vagina.
The female condom is now in place and ready for use with your partner.

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Female Condoms

AFTER INTERCOURSE:

To remove the female condom, twist the outer ring and gently pull the condom out.

Wrap the condom in the package or in tissue, and throw it in the garbage. Do not put it into the toilet.

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Harm Reduction for Injecting Drug Users

For better or worse, licit and illicit drug use is part of our world and we must work to minimize its harmful effects rather than simply ignore or condemn it.

Clinicians should ensure that substance users are engaged in medical care *regardless of whether or not they are actively using drugs*.

Drug use is a complex, multi-faceted phenomenon that encompasses a continuum of behaviors from severe abuse to total abstinence. We must acknowledge that some ways of using drugs are clearly safer than others.

"Harm reduction" is a set of practical strategies that reduce negative consequences of drug use, incorporating a spectrum of strategies from safer use; to managed use; to abstinence. Harm reduction strategies meet drug users "where they're at" – addressing conditions of use along with the use itself.

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Harm Reduction for Injecting Drug Users

Stress the following messages when talking with IDUs:

- The best way to prevent HIV, HBV, and HCV transmission is to NOT inject drugs.
- Entering substance abuse treatment can help to reduce or stop injecting. This will lower your chances of infection.
- Get vaccinated against hepatitis A and hepatitis B. These types of viral hepatitis are preventable with vaccines.

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Harm Reduction for Injecting Drug Users

Stress the following messages when talking with IDUs:

If the IDU cannot or will not stop injecting, advise them to:

- Use a new, sterile syringe obtained from a reliable source to prepare and divide drugs for each injection.
- Never reuse or share syringes, water, cookers, or cotton.
- Use sterile water to prepare drugs each time, or at least clean water from a reliable source.
- Keep everything as clean as possible when injecting.

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Harm Reduction for Injecting Drug Users

If you can't use a new, sterile syringe and clean equipment each time, then disinfecting with bleach may be better than doing nothing at all:

Fill the syringe with clean water and shake or tap. Squirt out the water and throw it away. Repeat until you don't see any blood in the syringe.

Completely fill the syringe with fresh, full-strength household bleach. Keep it in the syringe for 30 seconds or more. Squirt it out and throw the bleach away.

Fill the syringe with clean water and shake or tap. Squirt out the water and throw it away.

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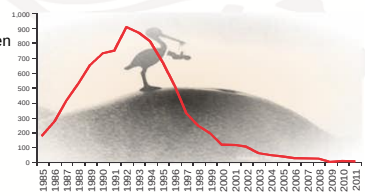
Perinatal Prevention

CDC estimates that globally, as many as 1,600 babies are infected daily and over half a million yearly.

The National Institutes of Health showed that the use of AZT by U.S. pregnant women and their newborn significantly reduces the baby's risk of maternally-transmitted HIV infection from 25% down to 2%.

Estimated Numbers of Perinatally Acquired AIDS Cases by Year of Diagnosis, 1985–2011 — United States and Dependent Areas



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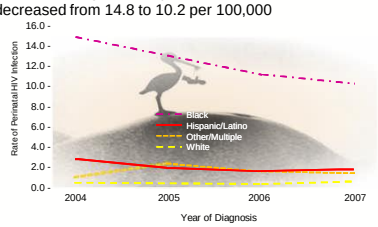
Perinatal Prevention

The annual rate of diagnoses of perinatal HIV infection per 100,000 infants aged less than1 year, by race/ethnicity in 34 U.S. states from 2004-2007.
From 2004 to 2007, the annual rate of diagnoses of perinatal HIV infection for black children decreased from 14.8 to 10.2 per 100,000 ($p = 0.003$), and the rate for Hispanic children decreased from 2.9 to 1.7 per 100,000 ($p = 0.04$). The rates for white children and for children of other or multiple races did not change significantly.



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Perinatal Testing

Still many women in the US are not tested prior to becoming pregnant and may receive care late in their pregnancy or not until the time of delivery. This is too often the case for minority women with few resources.

Because of the increased risk of HIV infection, CDC recommends that HIV testing be included for *all* women along with other routine prenatal tests.

HIV testing is to be presented as a routine part of prenatal testing and will be performed unless the woman chooses to "opt-out" of the test. Women must sign an informed consent and receive pre and post-test counseling.

Rapid testing (also with the opt-out approach) is recommended for women who present for labor and delivery who have not recently had an HIV test.

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Perinatal Prevention

To reduce the risk of transmission, AZT should be administered to the HIV positive mother at doses of 100mg PO five times per day from 14-34 weeks of gestation, followed by IV AZT 2mg/kg load and 1mg/kg/hour during delivery.

The baby should then be administered 2mg/kg PO q6h for the first six weeks of life.

Complete protocols and recommendations for perinatal care are available at http://aidsinfo.nih.gov/ContentFiles/PerinatalGL.pdf

NOTE: Babies born to HIV infected mothers will test positive at birth for antibodies. These are *maternally-transmitted antibodies*, so they do *not* indicate that the baby is infected. These maternally-transmitted antibodies will disappear within 15 months. If the infant continues to be antibody positive at that point, it is because the baby is infected and is now producing their own antibodies.

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Occupational Prevention

The Occupational Safety and Health Administration (OSHA) issued specific standards concerning bloodborne pathogens in the workplace (United States Department of Labor, 1992) to decrease occupational exposure in health care workers. Employers must provide the following:

- Free hepatitis B immunization for employees exposed to blood and body fluids;
- Personal Protective Equipment (PPE = latex gloves, hypoallergenic gloves, goggles, gowns and face masks);
- Closable and puncture-resistant containers for sharps disposal;
- Medical evaluations for exposed employees and confidential treatment;
- Employers must also guarantee that standard precautions and work practice controls are followed;
- Employers must train employees about prevention during working hours. After initial training during orientation, a yearly review to reinforce regulations is essential.

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Occupational Prevention

The CDC has determined that the following body fluids require Universal Precautions to protect the health care worker against bloodborne infections (HIV, HBV, HCV):

- blood or body fluids containing blood
- semen (includes pre-ejaculate)
- vaginal secretions
- cerebrospinal fluid
- synovial fluid
- pleural fluid
- peritoneal fluid
- pericardial fluid
- amniotic fluid
- saliva in dental settings (due to blood)
- tissues, mucous membranes or non-intact skin

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Occupational Prevention

The CDC has also determined that the following body fluids *do not* require Universal Precautions to protect the health care worker against bloodborne infections (HIV, HBV, HCV) *unless they contain visible blood*:

- feces
- nasal secretions
- sputum
- sweat
- tears
- urine
- vomitus
- saliva (except in dental settings)

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Occupational Prevention

OSHA requires certain work environment controls. Eating, drinking, smoking, applying cosmetics, and handling contact lens are not permitted in areas where blood and/or body fluids are present. Food and drinks are not permitted in refrigerators that contain blood, body fluids, or tissues. Suction equipment must be available to avoid mouth suctioning of blood, meconium, or respiratory secretions. Eyewash stations must be readily accessible for splashes to the eye.

Appropriate barriers are the first line of defense in decreasing occupational exposure to HIV. Every patient is considered potentially infectious. Gloves should be worn whenever there is a potential for direct skin contact with blood such as during venipuncture, when coming into contact with mucous membranes, non-intact skin, or items and surfaces that contain blood or body fluid. Latex gloves provide more protection than synthetic gloves, and double gloving is always an option. Even with a needlestick puncture, gloves may decrease the amount of blood transferred.

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Occupational Prevention

Masks, protective eyewear and face shields are to be used whenever blood or body fluids may splatter, splash, spray or become aerosolized.

Gowns, lab coats, or aprons are to be used during procedures in which clothing may be soiled with blood or body fluids.

Gowns, goggles and masks should not allow blood or body fluids to reach clothing, undergarments, and skin or mucus membranes. Gowns made of single-layer polyethylene film offer the greatest protection, and reinforced gowns offer adequate protection in most situations. Goggles should have solid side shields to fully protect the eyes. Masks may be purchased which include eye protection.

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Occupational Prevention

Surgical caps or hoods are to be used when blood or body fluid may splash or spatter onto the head, and fluid proof shoe covers are to be used if shoes may become contaminated or soaked with blood or body fluids.

Sharps should be respected. Where possible, needleless or needle-sheathing devices are recommended. Needles should never be recapped. If absolutely necessary, hollow-bore needles can be recapped by using a one-handed "scoop" method or with a mechanical recapping device.

Needles, knife blades and lancets should be disposed of in closable, puncture-resistant, biohazardous-labeled containers. Needles should not be placed on food trays, in beds, or in routine waste containers.

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Occupational Prevention

Additional practices that reduce the risk of infection include:

- Frequent, thorough hand hygiene, including after removal of gloves;
- Changing gloves between patients;
- Removal of personal protective equipment immediately after contamination whenever possible, or when leaving the work area;
- Using designated areas and containers for the storage, disposal, washing or decontamination of personal protective equipment;
- Using safer medical equipment such as self-sheathing syringes;
- Avoid bending, breaking or recapping of needles and other sharps;
- Disposal of sharps in puncture resistant, disposable sharps containers;
- Removal of sharps containers in a timely manner before they are over-filled;
- Do not eat, drink or apply cosmetics or contact lenses in areas where potential occupational exposure may exist;
- Do not store food and drink in refrigerators or cabinets, which may contain blood or other body fluids.

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Occupational Exposure

Of those healthcare personnel for whom case investigations were completed from 1981-2010, 57 had documented seroconversion to HIV following occupational exposures.

These exposures included: 48 with percutaneous exposure; 5 with mucous membrane and/or skin exposure, 2 with both percutaneous and mucocutaneous exposure, and 2 with unknown routes of exposure. Forty-nine healthcare personnel were exposed to HIV-infected blood, 3 to concentrated virus in a laboratory, and 1 to visibly bloody fluid, and 4 to an unspecified fluid.

The most recent possible new case of occupationally acquired HIV reported to CDC occurred in 2009; no new documented cases have been reported since 1999.

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Occupational Exposure

Healthcare Personnel with Documented and Possible Occupationally Acquired HIV Infection, by Occupation, 1981-2010

Occupation	Documented	Possible
Nurse	24	36
Laboratory worker, clinical	16	17
Physician, nonsurgical	6	13
Laboratory technician, nonclinical	3	-
Housekeeper/maintenance worker	2	14
Technician, surgical	2	2
Embalmer/morgue technician	1	2
Health aide/attendant	1	15
Respiratory therapist	1	2
Technician, dialysis	1	3
Dental worker, including dentist	-	6
Emergency medical technician/paramedic	-	12
Physician, surgical	-	6
Other technician/therapist	-	9
Other healthcare occupation	-	6
Total	**57**	**143**

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Post-Exposure Prophylaxis (PEP)

In 2005, the Centers for Disease Control recommended a 28-day HAART regimen (Post-Exposure Prophylaxis or PEP) for those who have been exposed to HIV.

Here is what you should do if you are exposed to the blood or other potentially infectious material of a patient. *Immediately (time is critical!):*

- Wash needlesticks with soap and water.
- Flush splashes to the nose, mouth, or skin with water.
- Irrigate eyes with clean water, saline or sterile irrigants.
- Report the exposure to the department responsible for managing exposures. Prompt reporting is essential for evaluation and initiation of post-exposure prophylaxis (PEP) *as soon as possible* (if indicated).

Post-exposure laboratory tests will be performed to evaluate seroconversion status for one year after exposure.

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Post-Exposure Prophylaxis (PEP)

(time is critical!)

The drugs have demonstrated effectiveness in preventing the virus (79% or better) in those who received treatment within the initial 24 hours of exposure.

The effectiveness falls to 52% of the time in those who are treated within 72 hours.

Those not treated within the first 72 hours should seek expert advice as soon as possible (call the PEPline at 1-888-448-4911).

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Post-Exposure Prophylaxis (PEP)

Basic and Expanded HIV Post-Exposure Prophylaxis Regimens:

Basic Regimen

- Zidovudine (Retrovir, AZT) 600 mg. per day, in two or three divided doses + Lamivudine (Epivir; 3TC) 150 mg. twice daily. Can be given as a single tablet (Combivir) twice daily.

Alternate Basic Regimens

- Lamivudine (3TC) 150 mg. twice daily + Stavudine (Zerit; d4T) 40 mg. twice daily (if body weight is <60 kg., 30 mg. twice daily).
- Didanosine (Videx, ddI) 400 mg. (if body weight is <60 kg., 125 mg. twice daily) daily, on an empty stomach + Stavudine (d4T) 40 mg. twice daily (if body weight is <60 kg., 30 mg. twice daily).

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Post-Exposure Prophylaxis (PEP)

☎ The PEPline offers health care providers around the clock advice on managing occupational exposure to HIV and hepatitis B and C. National Clinicians' Post Exposure Prophylaxis Hotline is 1-888-448-4911 (24 hours a day – 7 days a week).

☎ Warmline (National HIV Telephone Consultation Service) is 1-800-933-3413, offering treating clinicians current HIV clinical and drug information and expert case consultation.

NOTE: Volume UP for next slide …

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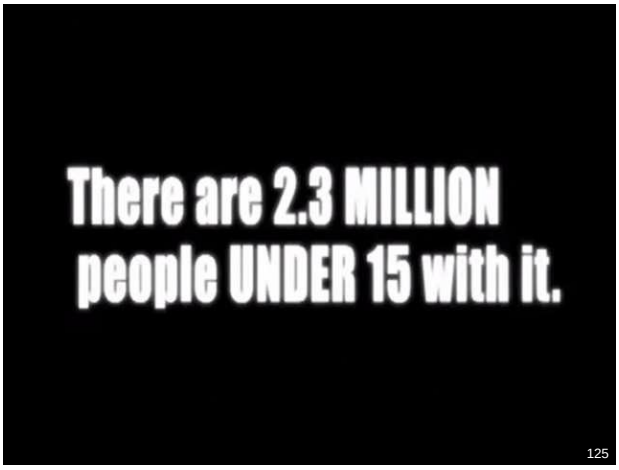

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Identified Risk Behaviors

Transmission of HIV occurs when an infected person's blood, semen or vaginal secretions enters an uninfected person's body, allowing HIV access to $CD4^+$ cells. There are only a few ways this is likely to happen with infectious body fluids:

- **Blood** – injection drug use, sexual transmission, healthcare, perinatal
- **Semen** – sexual transmission
- **Vaginal secretions** – sexual transmission

Therefore, CDC has listed the following as transmission categories for HIV:

- MSM = Men who have sex with men
- IDU = Injecting Drug Users
- MSM/IDU = Men who have sex with men and are injecting drug users
- HRH = High-risk heterosexuals (contact with a person known to have HIV, or to be at high risk for HIV infection as listed above)
- Other (includes hemophilia, blood transfusion, perinatal, and risk not reported or not identified).

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Identified Risk Behaviors

Terms used to describe transmission categories describe HIV *risks*; not *populations*. It is important to understand why these terms are used and to use them correctly.

"MSM" is used instead of "gay" or "bisexual" because many men who have sex with men deny that fact or otherwise refuse to label themselves with these terms. And not all "gay" men are sexually active. "Men who have sex with men" describes the behavior that may put a person at risk. Prevention messages should target MSM rather than using labels that alienate people and create barriers. Only MSM who practice unsafe sex with an infected person are at risk of infection.

"IDU" stands for "injecting drug user." It is used to describe those who inject drugs, illicit or otherwise. Not all people who inject drugs do so intravenously, so the term "intravenous drug user" is not appropriate to use – it is not inclusive for skin poppers, steroid injectors, hormone injectors, etc. Only IDU who share injection equipment, supplies or contaminated drugs with an infected person are at risk of infection.

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Identified Risk Behaviors

Because so many MSM and IDU have been infected, those men with HIV who belong in both categories are referred to as "MSM/IDU" since we can never be certain which way HIV was transmitted. Only MSM/IDU who practice unsafe sex with an infected person or who share injection equipment or supplies with an infected person are at risk of HIV.

Just as not all MSM or IDU are at high risk of HIV, nor are all those who are heterosexually oriented. "High-risk heterosexuals" or "HRH" specifically refers to those heterosexuals with sexual contact with MSM with HIV, an IDU with HIV, or another heterosexual who has documented HIV.

Since the advent of HIV testing, the blood supply and coagulation therapies for hemophiliacs have been safer than ever. Also, with the perinatal HIV-prophylaxis in place, fewer perinatal cases are diagnosed each year. Sometimes, people with AIDS are not properly interviewed, or die before being interviewed, or are lost to follow-up before the physician has adequately reported risk information. All of these people with HIV fall into CDC's "other" transmission category until additional risk information becomes available.

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Transmission Categories

Transmission categories used for tracking HIV are hierarchical as follows:

1. MSM
2. IDU
3. MSM/IDU
4. HRH
5. Other

"Hierarchical" means that those with multiple risks of HIV infection are placed into a single transmission category that represents the most likely method of transmission. This avoids duplicating counts.

In other words, a man with HIV who has sex only with women now, but had a brief one-time affair with a man in 1982, would be placed in the MSM category (even though he may have been infected by a female partner).

A male IDU who has never shared injection equipment, supplies or taken any blood risks with another person, but who has sex with several women, would be placed in the IDU category, regardless.

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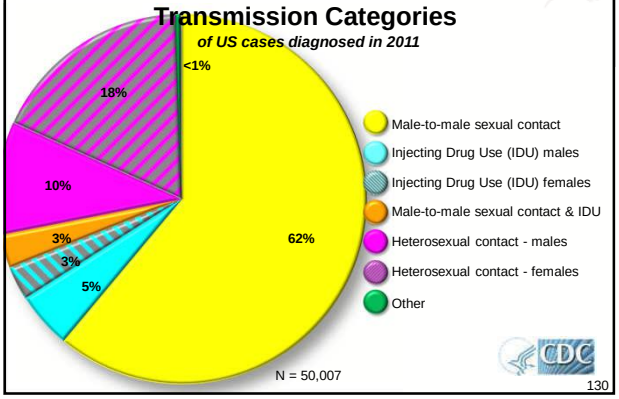
Transmission Categories

of US cases diagnosed in 2011



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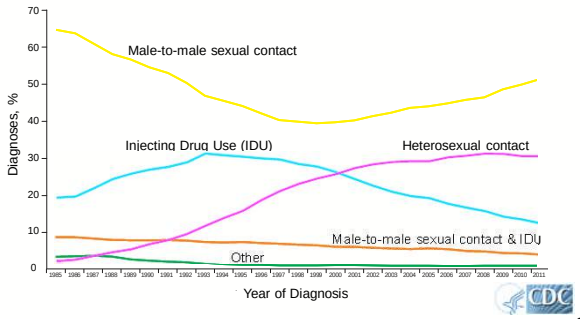
Transmission Category Trends 1985 - 2011

of Stage 3 (AIDS) cases diagnosed in US



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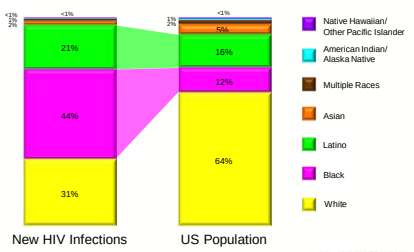
New HIV Infections & U.S. Population, by Race/Ethnicity, 2010

The racial disparity of HIV has reached epic proportions. Although Black Americans represent only 12% of the U.S. population, they accounted for 44% of new HIV infections in 2010. Blacks also accounted for almost half of new AIDS diagnoses (49%) in 2011 (AIDS being the most advanced form of HIV disease).



NOTE: HIV data are estimates and do not include U.S. dependent areas.
SOURCES: CDC, HIV Surveillance Report, Vol. 23; February 2013. CDC, Fact Sheet: New HIV Infections in the United States; December 2012. U.S. Census Bureau, 2010 Population Estimates.

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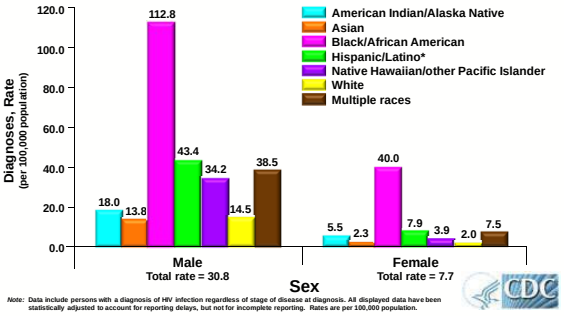
Rates of Adult/Adolescent HIV Diagnoses by Sex and Race/Ethnicity, 2011 – United States



Note: Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. All displayed data have been statistically adjusted to account for reporting delays, but not for incomplete reporting. Rates are per 100,000 population.

*Hispanics/Latinos can be of any race.

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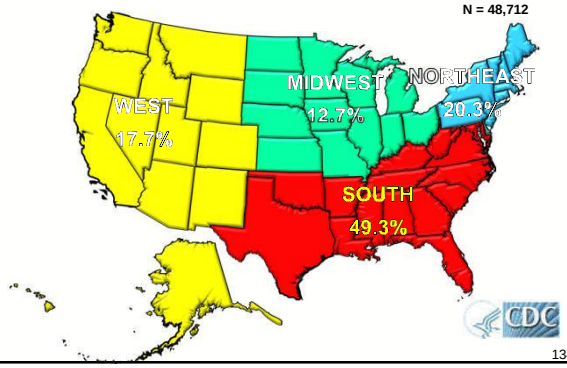
Percentages of HIV Cases by Region, 2011



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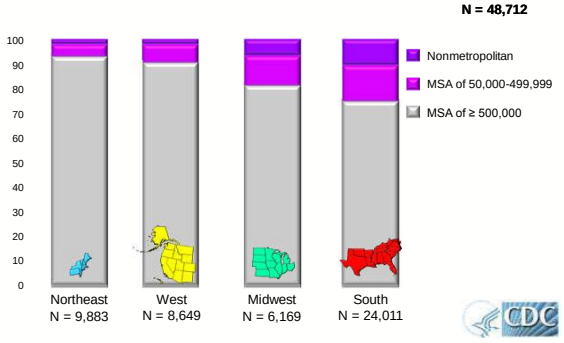
Ruralization of HIV Cases by Region, 2011



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Reported Number of Kentucky HIV/AIDS Cases, All Ages, Cumulative through June 2013

As of June 2013 there have been a total of **8,904** HIV & AIDS cases reported in Kentucky, of which 99% were adults or adolescents.

The cumulative number of pediatric AIDS cases since the beginning of the epidemic in Kentucky is 81.

Five or fewer new pediatric cases have been reported during each of the most recent 5 years.

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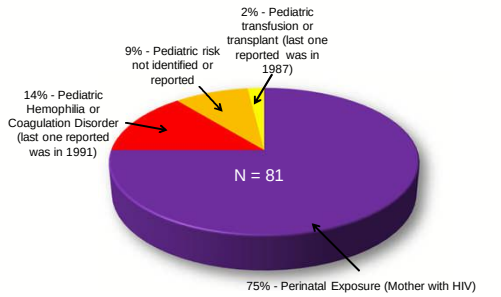
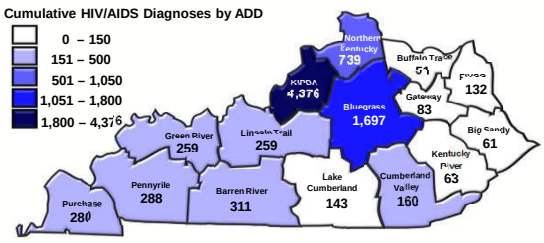
Kentucky Pediatric HIV/AIDS Cases, Cumulative through June 2013



137

Reported Number of Kentucky HIV & AIDS Cases, All Ages, Cumulative through June 2013

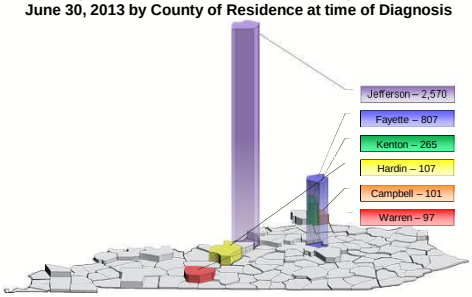


Total = 8,904

138

Persons Living with HIV Infection and Diagnosed in Kentucky

June 30, 2013 by County of Residence at time of Diagnosis



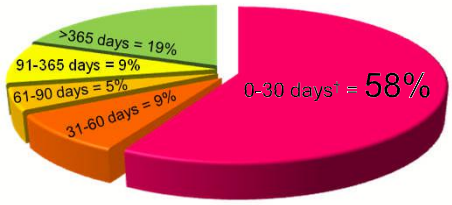
Statewide total = 5,782

COURTESY - Kentucky HIV/AIDS Surveillance Report, June 2013

139

Delayed Testing in Kentucky †

(days to AIDS diagnosis after initial HIV diagnosis)

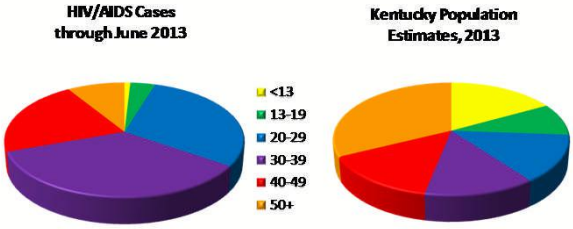


†Cases diagnosed with AIDS within the first 30 days of initial HIV diagnosis are considered concurrent diagnoses.

Data is for 01/2003 – 06/2013

140

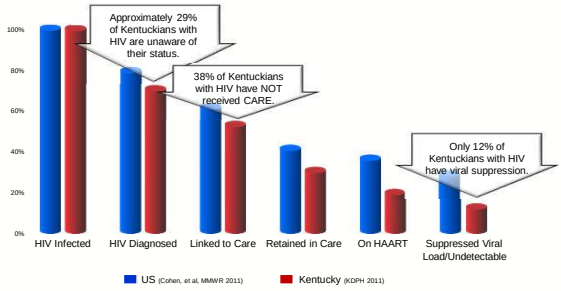
Kentucky HIV/AIDS Cases by Age at Diagnosis, 2013



141

Percentage of HIV infected persons engaged in selected stages of the Continuum of HIV Care

– Comparison between US and Kentucky



142

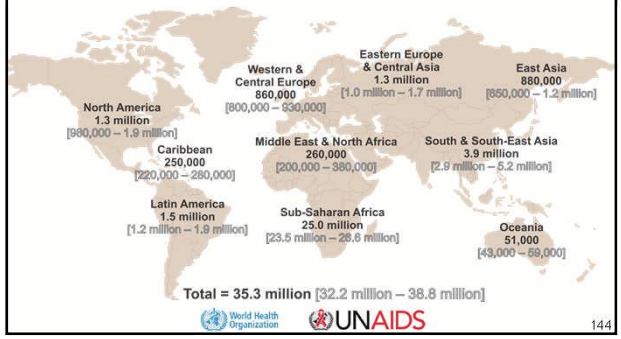
Reported Kentucky HIV/AIDS Cases, Ages & Race, through June 2013

In Kentucky, 83% of all cumulative HIV/AIDS cases have been among adult/adolescent males; there have been 7,325 males diagnosed with HIV/AIDS through June 2013. Women made up 17% of adult/adolescent HIV/AIDS cases cumulatively; 1,498 females have been diagnosed with HIV/AIDS in Kentucky since the beginning of the epidemic.

Among persons diagnosed with HIV/AIDS (cumulatively), 61% or 5,374 persons were White; 33% or 2,915 persons were Black; 4% or 344 persons were Hispanic; 2% or 190 persons were of different races or were classified as unknown.

143

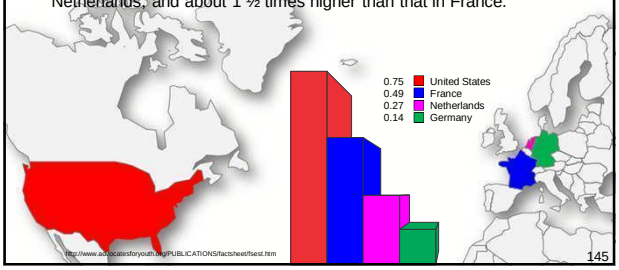
Adults and children estimated to be living with HIV in 2012, Worldwide



144

Comparison of American and European Youth HIV Prevalence - Males

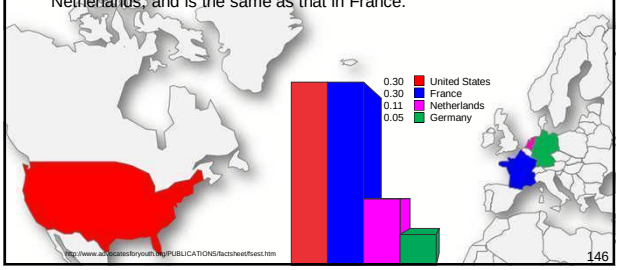
In the United States, the estimated HIV prevalence rate in young men ages 15 to 24 is over five times higher than the rate in Germany, nearly three times higher than the rate in the Netherlands, and about 1 ½ times higher than that in France.



145

Comparison of American and European Youth HIV Prevalence - Females

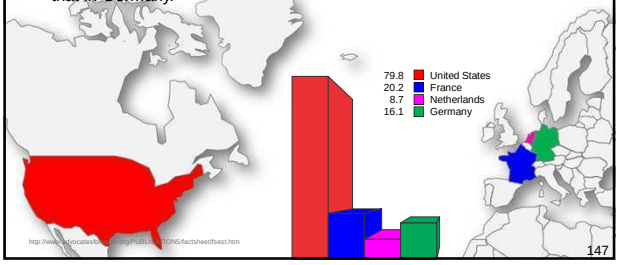
In the United States, the estimated HIV prevalence rate in young women ages 15 to 24 is six times higher than the rate in Germany, nearly three times higher than the rate in the Netherlands, and is the same as that in France.



146

Comparison of American and European Youth Pregnancy Rates

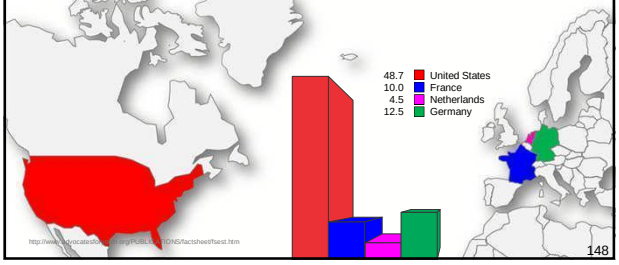
In the United States, the teen pregnancy rate is more than nine times higher than that in the Netherlands, nearly four times higher than the rate in France, and nearly five times higher than that in Germany.



147

Comparison of American and European Youth Birth Rates

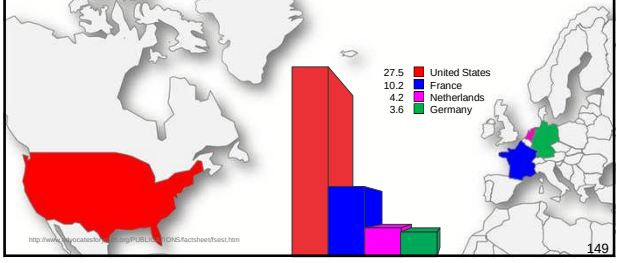
In the United States, the teen birth rate is nearly 11 times higher than that of the Netherlands, nearly five times higher than the rate in France, and nearly four times higher than that in Germany.



148

Comparison of American and European Youth Abortion Rates

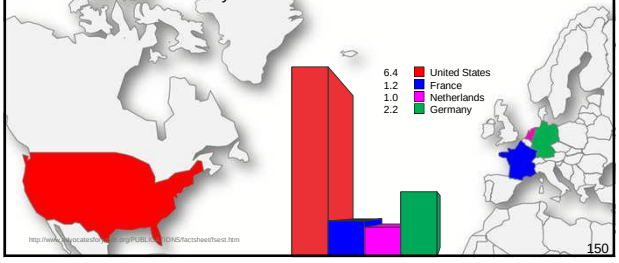
In the United States, the teen abortion rate is nearly eight times higher than the rate in Germany, nearly seven times higher than that in the Netherlands, and nearly three times higher than the rate in France.



149

Comparison of American and European Youth Syphilis Rates

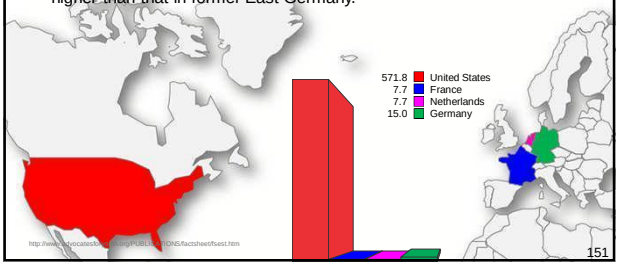
In the United States, the teen syphilis rate is over six times higher than that of the Netherlands, over five times higher than the rate in former West Germany, and nearly three times higher than that in former East Germany. Data are not available for France.



150

Comparison of American and European Youth Gonorrhea Rates

In the United States, the teen gonorrhea rate is over 74 times higher than that in the Netherlands and France, over 66 times higher than the rate in former West Germany, and over 38 times higher than that in former East Germany.



151

Self-Awareness of Prejudice

Across the world, SEX and DRUG USE play critical roles in the HIV pandemic …

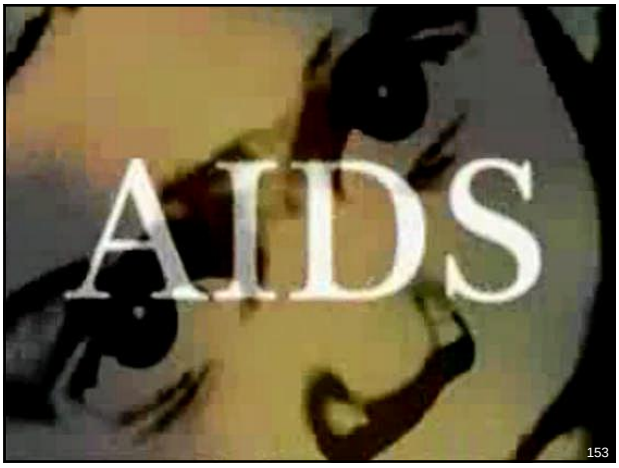
as do attitudes and beliefs about sexuality and comprehensive education vs. abstinence-only programs (sex and drugs).

Just because of who they are, those affected are often subject to criticism, discrimination, fear and hatred.

People who come into our care desire and deserve to be offered services with dignity, respect and compassion.

NOTE: Volume UP for next slide …

152



153

Self-Awareness of Prejudice

As a professional, you could relieve some of that suffering.

But it may require some self-awareness of prejudice.

154

Self-Awareness of Prejudice

All people, including healthcare providers, are at risk of allowing their own values to interfere with patient encounters:

- Stereotyping / Labeling / Assuming
- Discriminating
- Judging / Pushing your own values

These reactions are due to:

- Fear
- Denial
- Anger
- Prejudice against groups (homophobia, racism)
- Lack of knowledge

155

Self-Awareness of Prejudice

Why is it that when healthcare workers review a case of AIDS in grand rounds, they almost always mention the risk factors of that patient?

In most cases, how a person became infected with HIV is not a concern for the caregiver.

Doing so mostly attempts to point out the differences between the patient and the caregiver … leading to exclusion, discrimination, and substandard healthcare.

156

Self-Awareness of Prejudice

With fewer than 1% of AIDS cases in the US under age 13, why must children with AIDS be used to pull at the heartstrings of America?

Do adults with AIDS matter less?

If you call children the "blameless victims," what do you call the adults?

Do men deserve AIDS more than women?

Do injecting drug users deserve AIDS more than transfusion recipients?

Do African Americans deserve AIDS more than other Americans?

Do men who have sex with men deserve AIDS more than drug users?

157

Self-Awareness of Prejudice

NO ONE DESERVES AIDS

158

Self-Awareness of Prejudice

Healthcare providers often believe that drug users do not care about their own health; so why should *they*?

However, given the information and resources, drug users *do* reduce their risks of infection. Needle exchange programs have proven this repeatedly. Yet these programs remain illegal in most areas, including Kentucky.

? Drug users *do* care about their health. Are *you* teaching life-saving information on how to safely inject drugs for those who need to know?

Withholding harm-reduction information that is known to save lives is an example of the prejudice thwarting HIV prevention efforts.

Remember - if you are not part of the solution, you are part of the problem.

159

Self-Awareness of Prejudice

Be aware of your own feelings toward drug users and people who have different sexual orientations, cultural norms, beliefs, family structures, lifestyles or values.

Provide quality healthcare …
Nothing more. Nothing less.

Follow the GOLDEN RULE:

Treat others the way you want to be treated.

160

The Americans with Disabilities Act and HIV/AIDS

Discrimination against people with HIV has been such a problem that federal laws have been written to protect them against prejudice.

The Americans with Disabilities Act (ADA) gives federal civil rights protections to individuals with disabilities similar to those provided to individuals on the basis of race, color, sex, national origin, age, and religion. It guarantees equal opportunity for individuals with disabilities in public accommodations, employment, transportation, state and local government services, and telecommunications.

People who have HIV are protected by the ADA. An individual is considered to have a "disability" if they have a physical or mental impairment that substantially limits one or more major life activities, has a record of such an impairment, or is regarded as having such an impairment. Persons with HIV disease, both symptomatic and asymptomatic, have physical impairments that substantially limit one or more major life activities and are, therefore, protected by the law.

161

The Americans with Disabilities Act and HIV/AIDS

- Persons who are discriminated against because they *are regarded as* being HIV-positive are also protected. For example, a person who was fired on the basis of a rumor that they had AIDS, even if they did not, would be protected by the law.
- Moreover, the ADA protects persons who are discriminated against because they have a known association or relationship with an individual who is HIV-positive. For example, the ADA would protect an HIV-negative man who was denied a job because his partner had AIDS.
- The ADA prohibits employment discrimination against qualified individuals with disabilities. A "qualified individual with a disability" is a person who meets legitimate skill, experience, education, or other requirements of an employment position he or she holds or seeks, and who can perform the essential functions of the position with or without reasonable accommodation.

162

The Americans with Disabilities Act and HIV/AIDS

Employers must provide "reasonable accommodation." This is any modification or adjustment to a job, the job application process, or the work environment that will enable a qualified applicant or employee with a disability to perform the essential functions of the job, participate in the application process, or enjoy the benefits and privileges of employment.

Examples of "reasonable accommodations" include:

- Making existing facilities readily accessible to and usable by employees with disabilities;
- Restructuring a job;
- Modifying work schedules;
- Acquiring or modifying equipment;
- Reassigning a current employee to a vacant position for which the individual is qualified.

For more information about the ADA, contact the ADA Information Line for documents and questions at 800-514-0301 (Voice), 800-514-0383 (TDD).

163

KRS 214.625 Consent and Confidentiality

The Kentucky General Assembly finds that public health will be served by providing informed, voluntary, and confidential use of tests designed to detect HIV.

A general consent form is to advise patients that they may be tested for HIV, hepatitis, or any other blood-borne infectious disease as part of a medical procedure if ordered by a doctor for diagnostic purposes.

In an emergency where informed consent cannot be obtained, there is no requirement to obtain a previous informed consent.

No public health department or person in this state shall conduct a testing program for AIDS or HIV without first registering with the Cabinet for Health and Family Services and meeting all necessary requirements.

164

KRS 214.625 Consent and Confidentiality

A physician who orders the test must inform the patient of a positive result for HIV, as well as providing information and counseling concerning the infection and known medical implications.

Confirmatory tests must be performed prior to informing the patient of a positive test result.

No person in Kentucky shall perform a test to identify HIV, or its antigen or antibody, without obtaining informed consent from the patient except for emergencies situations where it is unobtainable.

165

KRS 214.625 Consent and Confidentiality

No person who has obtained or has knowledge of a test result shall disclose or be compelled to disclose the identity of any person upon whom a test is performed, or results of the test that permit the identification of the subject of the test, except to the following persons:

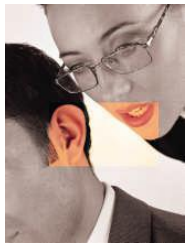
1. The subject of the test, or legal representative;
2. Those designated in a legally effective release of the test by the patient;
3. Physician, Nurse, or other provider with a legitimate need to know;
4. Health care providers consulting between themselves regarding diagnosis and treatment;
5. The Cabinet, in accordance with rules for reporting and controlling the spread of disease as required by state law;

166

KRS 214.625 Consent and Confidentiality

No person who has obtained or has knowledge of a test result shall disclose or be compelled to disclose the identity of any person upon whom a test is performed, or results of the test that permit the identification of the subject of the test, except to the following persons:

6. Health care provider which processes or uses a human body part from an infected person; or semen provided prior to July 13, 1990 for use in artificial insemination;
7. Health facility staff committees, for purposes of evaluation;
8. Authorized medical or epidemiological researchers;
9. A parent, foster parent, or legal guardian of a minor, a crime victim, or a person specified in KRS 438.250;
10. A person allowed access by a court order.



167

Confidentiality & Security of Kentucky HIV/AIDS Data

- ✓ The Kentucky HIV/AIDS Branch has been collecting AIDS case information including names for over 30 years and has never had a breach of confidentiality.
- ✓ Names are *never* transmitted to the CDC.
- ✓ The Surveillance Team of the HIV/AIDS Branch is housed inside a secure, locked room with restricted access.
- ✓ Electronic information stored in the HIV/AIDS Reporting System (HARS) is on a stand-alone computer that is not connected to the internet and is not accessible to unauthorized persons.

168

Kentucky

Reporting Law

902 KAR 2:020 (7). Disease Surveillance (HIV/AIDS).

RELATES TO: KRS 211.180(1), 214.010, 214.645, 333.130.

STATUTORY AUTHORITY: KRS 194A.050, 211.090(3), EO 2004-726

Even if you think the case may have already been reported by someone else …
Physicians and Medical Laboratories shall report within **FIVE (5) days** of diagnosis (NOTE – this is a shorter timeframe than other reportable diseases):

1. Any Positive test result for HIV infection;
2. $CD4^+$ assay including absolute $CD4^+$ cell counts and $CD4^+$%;
3. HIV detectable Viral Load Assay; and
4. A positive serologic test result for HIV infection; or

(b) A diagnosis of AIDS that meets the definitions of AIDS established within the Centers for Disease Control and Prevention (CDC) guidelines and reported in the:
1. "Adult HIV/AIDS Confidential Case Report Form"; or
2. "Pediatric HIV/AIDS Confidential Case Report Form".

169

Kentucky

Reporting Law

902 KAR 2:020 (7). Disease Surveillance (HIV/AIDS).

RELATES TO: KRS 211.180(1), 214.010, 214.645, 333.130.

STATUTORY AUTHORITY: KRS 194A.050, 211.090(3), EO 2004-726

(3) A report for a person with **HIV infection** without a diagnosis of AIDS shall include:
- (a) The patient's full name;
- (b) Date of birth, using the format MMDDYY;
- (c) Gender;
- (d) Race;
- (e) Risk factor, as identified by CDC;
- (f) County of residence;
- (g) Name of facility submitting report;
- (h) Date and type of HIV test performed;
- (i) Results of $CD4^+$ cell counts and $CD4^+$%;
- (j) Results of viral load testing;
- (k) PCR, HIV culture, HIV antigen, if performed;
- (l) Results of TB testing, if available; and
- (m) HIV status of the person's partner, spouse or children.

(4) Reports of **AIDS cases** shall include the information in subsections (1) through (3) of this section; and
- (a) The patient's complete address;
- (b) Opportunistic infections diagnosed; and
- (c) Date of onset of illness.

170

Talking with Your Patients about Behavioral Risk Factors for HIV and AIDS

TALK WITH YOUR PATIENTS ABOUT THEIR RISKS

BEFORE YOU TEST THEM!

Patients may be uncomfortable disclosing personal risk factors and hesitant to respond to questions about sensitive issues, such as sexual behaviors and illicit drug use.

However, evidence suggests that when asked, patients will often discuss behaviors that increase their risk of acquiring HIV. Evidence also suggests that some patients have greater confidence in their clinician's ability to provide high-quality care when asked about sexual and STD history *during the initial visits*. Of course, the more comfortable you are with discussing these issues the more comfortable your patients will be. Practice makes perfect.

171

Talking with Your Patients about Behavioral Risk Factors for HIV and AIDS

TALK WITH YOUR PATIENTS ABOUT THEIR RISKS

BEFORE YOU TEST THEM!

If you wait until telling the patient they have a positive HIV test, you have missed any real opportunity to appropriately discuss risk.

Once you have told the patient they are positive,

it is unfair and unrealistic to expect them to be fully participatory in any first-time interview.

ALWAYS TALK WITH YOUR PATIENTS ABOUT THEIR RISKS BEFORE YOU TEST.

172

Ideas for Talking with Your Patients about Risk Factors

Put your patients at ease.

- ✓ Reassure your patients that their responses will remain confidential.
- ✓ Let them know that you ask all of your patients these types of questions (as you should be).
- ✓ Tell them that the information they provide about their sexual and drug-use behaviors will help you provide the best possible care.
- ✓ Use **open-ended questions** to avoid simple "yes" or "no" responses. This encourages patients to discuss personal risks and the circumstances in which risks occur. Open-ended questions also help you gather enough detail to understand potential transmission risks and make more meaningful recommendations for prevention of secondary transmission.
- ✓ Respect a patient's choice to not answer a question. This increases the chance that they will provide the information at a later date.

At the end of the session,

- ✓ Summarize the patient's responses to make certain that both you and your patient understand what was said.
- ✓ Encourage the patient to ask questions about any issues they might not have understood, and, if needed, schedule a follow-up appointment.

173

Some things to remember when speaking with your patients about risk factors

Honest responses may be more forthcoming if the question is worded in such a way to "normalize" the behavior and to elicit discussion with the patient, not just a "yes" or "no."

- ✓ "Some people inject drugs. Tell me about any of your experiences with injecting drugs."
- ✓ "Many people have anal intercourse. What are your experiences with that?"
- ✓ "Some people trade sex for drugs or money. Tell me your history with that."

Labels can be misleading… so please quit using them.

- ➢ Some men do not consider themselves "gay" if they practice same sex anal insertive intercourse, even though they may see their receptive partners as "gay."
- ➢ The question "Are you a homosexual?" may be answered with "no" by a person who has had only a few same sex encounters or who considers him/herself to be "bisexual" or "straight," regardless of the full picture of their sex life. Men on the "down-low" are likely to dismiss your advice because "you're not talking about them."
- ➢ Describe behaviors instead of assigning labels to the behavior. Use terms "injecting drug user", "men who have had sex with men","men who have had sex with women", or "sex worker."

Adapted from:
Gerbert B, Bronstone A, Pantilat S, et al.When Asked, Patients Tell: Disclosure of Sensitive Health-Risk Behaviors. Med Care 1999;37:104–11.
MountainPlains AIDS Education and Training Center

174

CDC's Six-Step HIV Prevention & Testing Counseling Protocol – "CIGARS"

C 1. Client is introduced and oriented to the session
I 2. Identify risk behaviors and circumstances
G 3. Identify safer Goal behaviors
A 4. Develop a client-focused Action plan
R 5. Make Referrals and provide support
S 6. Summarize and close the counseling session

175

CDC's Six-Step HIV Prevention & Testing Counseling Protocol – STEP 1

C *1. Client introduced and oriented the to the session*

- Introduce self
- Describe purpose of session
- Describe counselor role

176

CDC's Six-Step HIV Prevention & Testing Counseling Protocol – STEP 2

I *2. Identify client's risk behaviors and circumstances*

177

CDC's Six-Step HIV Prevention & Testing Counseling Protocol – STEP 2

Types of Behaviors

I

- **Risk Behaviors:** Behaviors that directly result in HIV transmission
- **Safer Goal Behaviors:** Behaviors that prevent or reduce HIV transmission *and the client is willing to adopt*
- **Action Steps:** Specific incremental steps to help adopt safer goal behaviors

178

CDC's Six-Step HIV Prevention & Testing Counseling Protocol – STEP 2

Risk Circumstances & Triggers

I

- Identify triggers and vulnerabilities that lead to risky behavior
- Focus the session on the presenting problem

179

CDC's Six-Step HIV Prevention & Testing Counseling Protocol – STEP 3

G *3. identify safer Goal behaviors*

180

CDC's Six-Step HIV Prevention & Testing Counseling Protocol – STEP 3

Criteria Safer Goal Behaviors Should Identify

C I **G** A R S

- With which partners?
- In what settings?
- Under what circumstances?
- During what time periods?
- How often?

181

CDC's Six-Step HIV Prevention & Testing Counseling Protocol – STEP 4

C I G **A** R S

4. *develop a client-focused Action plan*

- Addresses the barriers to and benefits of a safer goal behavior
- Focuses on realistic action steps the client will take to adopt a safer goal behavior

182

CDC's Six-Step HIV Prevention & Testing Counseling Protocol – STEP 4

Helpful Questions for Action Planning

C I G **A** R S

1. What are the disadvantages—bad things—about the new behavior?
2. What are the advantages—good things—about the new behavior?
3. What might make it hard for you to perform the new behavior?
4. What might make it easier for you to perform the new behavior?
5. Who would disapprove if you took up the new behavior?
6. Who would support you in adopting the new behavior?

183

CDC's Six-Step HIV Prevention & Testing Counseling Protocol – STEP 5

C I G A **R** S

- Goal of HIV prevention counseling is preventing HIV
- Counselors/agencies cannot meet all needs of clients
- Counselors must provide referrals for additional services

5. *make Referrals and provide support*

184

CDC's Six-Step HIV Prevention & Testing Counseling Protocol – STEP 5

Tips for Making Effective Client Referrals

C I G A **R** S

- Help clients define priorities.
- Discuss and offer options.
- Offer referrals.
- Refer to known and trusted services.
- Assess client responses to referral services.
- Facilitate active referrals.
- Develop a follow-up plan.

185

CDC's Six-Step HIV Prevention & Testing Counseling Protocol – STEP 6

Formulate a concise statement that:

C I G A R **S**

- Describes briefly what has been discussed and decided
- Lists the commitments for risk reduction, referrals, and next steps
- Creates confirmation
- Is a supportive reminder and validation of the work accomplished

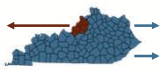
Closure summarizes what the client has agreed to do and what the counselor will be providing to support him/her in making behavioral change.

6. *Summarize and close the session*

186

Where to Report Kentucky's AIDS & HIV Cases

Report either by phone or mail. When mailing, please place case forms inside of two (2) sealed envelopes, both marked CONFIDENTIAL.

For reports from Jefferson, Henry, Oldham, Bullitt, Spencer, Shelby and Trimble counties:		For reports from the other 113 counties:
Reporting by Phone: Fay Davis at 502-574-6570		Reporting by Phone: Medina Tipton, Surveillance Coordinator Julie Nakayima, Surveillance Technician at (866) 510-0008
Reporting by Mail: Louisville Metro Health Dept. Attn: Fay Davis 400 East Gray St., Room 317 Louisville, KY 40202		Reporting by Mail: Kentucky Department for Public Health Attn: Medina Tipton 275 E. Main Street HS2E-C Frankfort, KY 40621

Confidential HIV/AIDS Case Report Forms and other HIV/AIDS Branch Information:
http://chfs.ky.gov/dph/epi/HIVAIDS

187

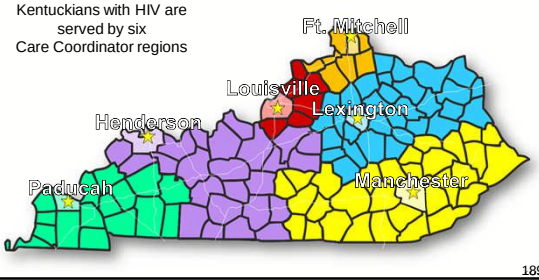
Federal and State HIV/AIDS Services in Kentucky

The Kentucky HIV Care Coordinator Program arranges for quality care and services to HIV infected people & their families in a timely and consistent manner across a continuum of care.

- ✓Case Management
- ✓Entitlement benefits
- ✓Medical care
- ✓Prevention counseling
- ✓Housing
- ✓Counseling
- ✓Transportation
- ✓Legal services
- ✓Nutrition services

Federal and State HIV/AIDS Services in Kentucky

Kentuckians with HIV are served by six Care Coordinator regions



189

Federal and State HIV/AIDS Services in Kentucky

Kentucky HIV Care Coordinator Program Goals:

- Optimize client's self-care by empowering them to direct their own life decisions.
- Identify the extent of the client's informal support systems.
- Assist the client in locating/accessing services like entitlement benefits (Medicaid and/or Social Security Disability Services), medical care, housing, counseling, transportation, legal and nutrition services.
- Identify/establish referral systems with area health care and social service providers and community-based HIV organizations, and HIV counseling and testing sites.
- Ensure that duplication of services by formal and informal support systems does not occur.

190

Federal and State HIV/AIDS Services in Kentucky

Kentucky HIV Care Coordinator Program Goals (cont.):

- Provide the client with educational information about disease transmission and maintenance of a healthy lifestyle, and encourage and reinforce good health habits and secondary prevention methods.
- Identify/document service needs and advocate for effective policies and resource development.
- Facilitate the initial and on-going education of health care and social service providers to the issues surrounding HIV disease.
- Ensure that program funding is appropriately used to meet the needs of HIV+ persons in a manner that coordinates funding streams and makes use of existing community resources and services.

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Federal and State HIV/AIDS Services in Kentucky

Care Coordinators help to access the following assistance programs:

- Kentucky AIDS Drug Assistance Program (KADAP) – assists low-income, eligible Kentuckians with the purchase of AIDS-related medications prescribed for FDA-approved indications. **1-866-510-0005**
- Kentucky Health Insurance Continuation Program (KHICP) – provides payments for continuing health insurance benefits for eligible individuals who are at risk of losing their employment-related or private-pay health insurance because of HIV disease.
- Kentucky Outpatient Health Care and Support Services Programs – provide assistance with a wide range of community-based medical and non-medical support services (physical and mental health care, housing, nutrition, and transportation services).
- Housing Opportunities for People With AIDS (HOPWA) – HUD assistance through contracted agencies of the Kentucky Housing Corporation.

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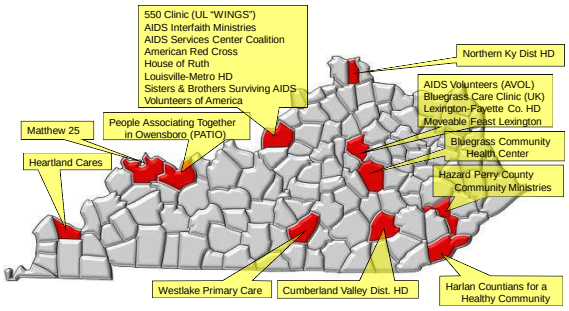
Community Based Organizations



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This has been

HIV/AIDS Professional Education for Kentucky

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Kentucky Cabinet for Health & Family Services // Department for Public Health
Division of Epidemiology and Health Planning // HIV/AIDS Branch

Thank You!

This course meets the licensure requirements of KRS 214.610 / 615 / 620 for all health professionals. Kentucky CHFS-Approval # 0415-1566-M

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